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ABSTRACT

Six units focusing on the effects of spatial change on women are designed to supplement college introductory courses in geography and the social sciences. Unit 1, Woman and Agricultural Landscapes, focuses on how women contributed to landscape change in prehistory, women's impact on the environment, and the hypothesis that women developed agriculture. Unit 2 discusses how men and women use space differently. Topics include female and male space, the interior space of the home, and women's contribution to the landscape of the home. Unit 3 examines women and crime in the context of social change. Readings suggest how people living under similar environmental stress choose different coping actions, explore the spatial patterning of urban crime, and examine the prison as a socializing force for women. Unit 4 discusses factors to be considered in locating family services, using day care centers as an example. Provided with maps, transit schedules, and census tract statistics, students select and set up a day care center. Unit 5 examines motives for contemporary female migration to cities in Latin America. Unit 6, Female Industrial Migration in the Early 19th Century, analyzes reasons for the predominance of females in industrial migration. Each unit contains objectives and student readings. (KC)

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WOMEN AND SPATIAL CHANGE:

LEARNING RESOURCES FOR SOCIAL SCIENCE COURSES

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Edited by

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Janice J. Monk

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PREFACE

Women and Spatial Change: Learning Resources for Social Science Courses consists of six units—a selection of teaching and learning modules. The authors designed the materials for use in a variety of survey-type introductory geography courses that rely on textbooks and other curriculum materials that lack gender balance. The materials will also be valuable learning resources for survey courses in history, sociology, anthropology, planning, women's studies, and American studies. Each unit is a starting point from which instructors may modify and supplement their individual teaching strategies. Together they serve as models of several types of units for instructors wishing to develop further gender-balancing supplementary materials.

The six units represent different types of introductory instruction in geography and social science courses as well as different levels of gender balance. Some will fit into traditional cultural courses and courses with a people-and-environment theme. Others incorporate a more advanced social science analysis of spatial behavior and distributions using modern sources of data and a variety of skill-building student activities. Thus, the authors have attempted to provide diverse teaching strategies and disciplinary orientations from which instructors may choose the one or two appropriate to their situations.

The units are

1. Women and Agricultural Landscapes
2. Landscapes of the Home
3. Geographic Perspectives on Social Change: The Example of Women in Crime
4. Locational Decision Making: The Case of the Day Care Center
5. Village to Barriada: Contemporary Female Migration to Cities in Latin America
6. Farm to Factory: Female Labor Migration in Early 19th Century New England

In each of these units there is

1. A student reading, and
2. An instructor packet with
   a. key concepts, skills and value issues;
   b. materials for lecture discussion;
   c. exercises and suggestions for student activities; and
   d. annotated bibliography (some include audio-visual suggestions.)

Units 5 and 6 share the same topical content, but have different regional and historical settings. (Roger Miller originally developed Unit 6 using Unit 5 as a model.) The others have little overlap in their subject matter.

As a set, the modules were written collaboratively by Bonnie S. Loyd, Roger Miller, Janice J. Monk, Arlene C. Rengert, and George Rengert, with advice, commentary, and, in some cases, written contributions from Alan Backler, Marilyn A. Brown, Dorothy Drummond, Perry O. Hanson, James E. Landing, David R. Lee, Michael Libbee, Janet Henshall Momsen, Salvatore J. Natoli, Eldor C. Quandt, and Lowry T. Taylor and students at Florida Atlantic University, Middlebury College, Northeastern Illinois University, San Francisco State University, Temple University, University of Calgary, University of Colorado, University of Illinois, Chicago Circle, University of Illinois, Urbana-Champaign, University of Oklahoma, Western Michigan University, and West Chester State College. Barbara Bonnell typed the final manuscript.

To all who contributed to this project, we express our heartfelt thanks.

Arlene C. Rengert
Janice J. Monk
Project Directors

MODULE 1:
WOMEN AND AGRICULTURAL LANDSCAPES

by Bonnie S. Loyd, Arlene C. Rengert, and Janice J. Monk

What makes landcapes look the way they do? What can the landscape tell us about human relationships to the environment, now and in the past? These questions have stimulated many geographic studies, but most have examined how men's activities have shaped the landscape. In this module we will try to assess the impact women might have made on the land.

OBJECTIVES

1. To understand landscape as a combination of human and natural forces.
2. To assess how one group—women—contributed to landscape change in prehistory.
3. To investigate why women's impact on the environment has been neglected by most scholars.
4. To recognize landscape as a record of culture for many human groups.
5. To review Sauer's hypothesis that women developed agriculture.
6. To analyze how women in prehistory may have used fire, vegetation, and tools to modify their environment.

ASSESSING WOMEN'S CONTRIBUTIONS

A major theme of geographical study is human modification of the environment. Interpreting the human imprint on the landscape is a way of exploring culture. In the landscape we can trace the history of human existence and the development of culture. This area of study within geography has been revitalized by the ecology movement. The increasing concern with the fragility of the environment has highlighted our need to understand the relationship between humans and the land.

Although geographers study the human impact on the environment, their study has focused on particular types of modification—particularly large-scale activities outdoors, such as modern agriculture, forestry, mining, construction, and land development. The portrait that results is a landscape shaped by modern men. It is difficult to see what part women play in shaping the face of the earth. In recent years women accounted for only 14% of the workers in agriculture, forestry, and fisheries, 7% in construction, and a mere 2% in architecture.

Even though women are seldom mentioned in geography publications, they have shaped the landscape throughout history. A broader view of environmental change, extending back to prehistory, reveals their substantial contributions. To generate social theory it is sometimes useful to simplify history and generalize about the behavior of human society, but treating society as a unified group often conceals the creativity of subgroups and presents an impoverished view of our forebears. To understand human modifications of the earth fully, we need to unravel the impacts of many different groups—women, men, ethnic groups, religious groups, children, and old people. We can discover a more realistic view of history by going beyond the broad outlines and examining the nuances produced by real people acting in small groups. Scholarly research can only contribute to current society by examining all kinds of factual information and using many modes of analysis.

The role of women in changing the environment is hidden for several reasons. First, their activities are buried in history.. The geographer Carl Sauer believed that women in the Stone Age were the first keepers of fire and that they later developed agriculture. Both the use of fire and the domestication of plants caused revolutions in human life and had tremendous impacts on the look of the land that continue to the present.

A second reason that women's landscape activities are concealed is because many have taken place indoors. From the earliest times women have been the keepers of the household. Interiors are where humans spend most of their lives, but geographers have been reluctant to venture into this realm. Many of the questions that are asked about the exterior landscape can be asked about interior landscapes. How is the human imprint visible? How is the history of human culture revealed and preserved here? What processes are now shaping the landscape?

We might investigate why interior spaces have been avoided by geographers. Geography developed from explorations of the earth—both discovering new lands and investigating the geology and ecology of the natural environment. All these were adventures for hearty and educated men. Academic tradition has encouraged geographers to continue to direct their interests toward vigorous, outdoor male pursuits. But tradition alone no longers seems an adequate reason for geographers to ignore the contributions of women, which may be more subtle, on a smaller-scale, and indoors. Although our built environment may cover only a tiny portion of the face of the earth, it is the portion we humans use most intensively and the portion over which women have the most influence.

A third reason that women's landscape activities are neglected is that women's work is often unaccounted for in our economic system. Women's work often is not paid, and therefore it is difficult to measure. The work of managing a household is often invisible to economists because there are no wages and no profits; and yet we know that this work is crucial to the functioning of our society. The contribution of a wife to the operation of a farm is critical, but her separate work is difficult to measure in dollars, so it remains hidden. Women often work as volunteers, and their labor in charitable activities is vital in remedying a key deficiency in a capitalist economy—the provison of welfare services. Volunteer organizations are beginning to receive more recognition by economists as an effective use of labor to meet the demands of the society. Many women volunteers have also moved into environmental activities as members of ecology organizations and figures in the political process.

We cannot assert that women have taken a dominant role in shaping the face of the earth. For a variety of social, cultural, psychological, and biological reasons, their power to use environmental tools and make environmental decisions has been limited during much of human history. Nevertheless, the significant contributions women have made deserve much further study. In the course of this study we also need to evaluate the position of women today in environmental decision-making and to suggest how they can assume a fuller and more appropriate role.

EARLY WOMEN AND THE LAND

In attempting to fathom the origins of human culture, the distinguished American geographer, Carl Sauer, suggested that women were responsible for major advances in the earliest days of human existence. Sauer contradicted many other scholars who believed bands of monkeys led by males evolved into bands of humans led by males. In popular science books on ethology, writers still look to animal behavior to explain and justify dominance among human males. Scholarly analysis, such as that provided by Mary Crawford, reveals how weak these arguments are.

Sauer's interest in the role of women in prehistory was startling because anthropologists working in the same period examined the activities of male hunters and ignored women. Only in the last few years have anthropologists begun to revise our picture of early human culture to include women as active participants responsible for innovations.

Using the few shreds of evidence we have from the Stone Age and a great deal of logic, Sauer developed a theory of early human settlement based on women as heads of households. The extended care required for human infants suggests that in order for humans to survive, the mothers had to develop ways to care for their children. They needed great knowledge of and sensitivity to the local environment in order to gather a large supply of food within a small range.

From this simple social organization women moved on to many other activities. Food processing evolved as they experimented with ways to make roots, nuts, seeds, and fruits more palatable. The greatest advance in food processing was cooking. Sauer did not hypothesize about how early humans captured fire, but he did believe that women quickly became the keepers of the fire, because they cooked and remained close enough to home to tend the fire. So women became the guardians of one of the most powerful agents in landscape change.

Because women had to protect their offspring, they probably also chose the first shelters. The first shelters were not built but found. They may have been an overhanging ledge, a cave, or a tree. As soon as someone decided to move a rock or branch to improve the shelter, human construction began.

The family of mother and children, and eventually a husband who remained attached to the group, probably grew quickly into small communities. Community life modified the environment, particularly the local vegetation. Sauer points out that at the campsite vegetation was removed and the ground was trampled, refuse accumulated, the nearby food and fuel supply was depleted, digging for food caused unplanned tillage, passing groups of men brought new seeds by chance, prized trees and shrubs were protected, and fires for hunting and collecting scorched the land. All of these early modifications of the environment resulted from women-centered households and communities.

The settled communities allowed the opportunity to develop tools and arts. Women may have used the first tools to dig roots for their food supply. They may have also been the first to use containers to carry their food to their children. Large shells or leaves could have been early bowls. Both tools and containers marked major advances in early times. The community life was the breeding place for other cultural inventions. This early pattern of life also led to the domestication of plants for agriculture. If the men were going off to hunt, fish, and explore, it is unlikely that they were the first farmers. The women were the ones most concerned about food supply and who did the most experimentation with plants. They dug for roots and bulbs. At some point their gathering slowly evolved into managing the plants rather than simply taking what was available. The crops required tending and protection, and because the women stayed near home, this task probably was taken on by them.

READING:

Mary Crawford. " 'Evolution Made Me Do It': Women, Men, and Animal Behavior." *International Journal of Women's Studies* 1 (1978): 533-543.

Carl O. Sauer. "Sedentary and Mobile Bents in Early Societies." In *Social Life of Early Man.* Ed. by Sherwood L. Washburn. Chicago: Aldine, 1961: 256-266. Especially pp. 260-266.

MODERN WOMEN AND THE LAND

Today the impact of women on the landscape through farming, gathering, food preparation, and other household activities continues. Many of the tasks are not much different than the activities of women thousands of years ago. In developing nations women have a particularly large part in affecting the local environment. In many African and Asian societies women gather firewood as their basic cooking fuel. When the supply near their home is depleted, they walk greater distances and spend more time to find wood. When the local supply disappears, they may buy wood from men who deliver it in carts. This places a new economic burden on the family.

When the fuel supply is limited, women may change the family diet and cooking practices to cut down on the amount of fuel they need. In eastern Upper Volta, for example, women are not accepting the soybeans introduced in a large-scale development scheme, because they require more cooking time and fuel than cow peas. Other women choose to use more raw food, not to reheat leftover food, or not to boil water. Their decisions affect not only the natural and cultivated landscape, but the health of their family.

In developing nations women often have the responsibility for gathering or growing plants used for food, spices, medicine, crafts, and other household needs. They are the ones most attentive to the ecology of the village. U.S. government foreign development experts are beginning to recognize that these women should be consulted about agricultural development schemes and reforestation projects.

Women in developed nations also participate in agriculture. American farm wives are vital to the operation of a farm. Their activities are not limited to cooking for extra workers hired during the harvest. Women milk cows, drive tractors, harvest crops, and negotiate with buyers. Many male farmers now supplement their income with other jobs during slow seasons. When the men are away from home at other jobs, women often take over more of the daily tasks to keep the farm running. So the American landscapes of wheatfields and pastures are a product of the labor of both men and women.

READING:

Susan Super. "Women: Key to Reforestation." *Agenda* January-February 1980: 18-19. Available free from the U.S. Agency for International Development.

MODULE 2:
LANDSCAPES OF THE HOME

by Bonnie S. Loyd, Janice J. Monk, and Arlene C. Rengert

Through much of our history, women and men have been found in different places. Traditionally we associate women with indoors and the home and men with the outdoors. Usually when geographers study landscapes they focus on the outdoors, for example, they examine urban form or the exterior designs of buildings. Thus, they have learned more about male than female space. This module complements such traditional geographic knowledge. It first examines explanations for the sexual division of space, then looks at examples of the design of space within the home. Finally, it studies ways in which women have shaped this interior landscape.

OBJECTIVES

1. To assess how men and women use space differently.
2. To compare sociological and psychological explanations for differences in male and female spatial behavior.
3. To understand how men and women are socialized to learn gender roles.
4. To analyze the home as a landscape reflecting culture.
5. To evaluate the contributions of women to the landscape.
6. To identify the links between economic consumption and landscape change.
7. To consider whether traditional landscape activities assigned to men and women should continue.

FEMALE AND MALE SPACE

Our society continues to foster a subtle division of space into female and male territories. We need to understand male and female spatial domains in order to examine where and how women shape the landscape. Male spaces have been more public, larger, open, outdoors and have been settings for vigorous activity. Women have been relegated to spaces that are more private, smaller, enclosed, indoors and "safe." Spaces that are small and enclosed have received far less attention from professional geographers, although these spaces—houses, shops, and offices, for example—are where most of our living takes place. So exploring spatial territories often associated with women, such as the home, actually reveals much about the spatial behavior and landscape modifications of both women and men.

Geographer David Lee has investigated how these stereotypes are perpetuated in the media by examining advertisements. His findings that women often appear in the kitchen and men in the outdoors is no surprise.

To examine male and female space consider the following:

Phrases such as woman and the streets, woman's place is in the home, man of the world. How do they indicate the sexual divison of space?

Occupations such as secretary, nurse, waitress, teacher, interior decorator, salesperson, librarian, truck driver, construction worker, pilot, plumber, chauffeur, miner, farmer, architect, lawyer, traveling salesperson. How does the mobility of a job or the degree of control over the environment affect whether we think of the job as appropriate for males or females?

Historical activities such as those of explorers, pioneers, soldiers, political leaders, travelers, traders, trappers, gold miners, immigrants, peddlers. What do they tell us about the division of space, mobility, and the position of women?

How did these practices arise? Are they still appropriate today?

Exploring the basis for this spatial differentiation between the sexes offers an opportunity to see how different approaches in the social sciences can be used to examine the same phenomena. Erik Erikson, a distinguished psychiatrist at Harvard, was trained in the Freudian tradition of psychology. In recent years he has written several articles on women and inner space. At the core of his work are his observations of 10-, 11-, and 12- year-old boys and girls at play. His approach to the question of sex differences was to set up an experimental situation (presumably in the 1930's). Each child was given an assortment of toys and asked to create an imaginary scene in free play. The results were observed and recorded by Erikson. He observed a number of boys and girls of the same ages to obtain the most accurate results. He observed that girls tended to create quiet home scenes — interior spaces with low enclosing walls. The boys tended to build action-oriented outdoors scenes with tall buildings. How did Erikson interpret these results? His explanation relied heavily on his training about the importance of the body and sexual differences between males and females. These innate, biological distinctions figured heavily in his analysis. Erikson pointed out that women have a physiological interior space, a uterus, that is enclosed, passive, protected, and somewhat mysterious, while men possess a penis that is an exterior, vertical projection capable of activity. He saw the children's play as an expression of their body consciousness. In qualifying his position slightly, Erikson explained that culture—our shared beliefs—elaborates on what is biologically given. The further implication of this approach is that sex differences are deeply ingrained and therefore, permanent or difficult to change.

A second approach to this question draws on role theory from sociology. Sociologists believe that little behavior is innate or biological. Most behavior is learned socially, through contact with other people. People are taught appropriate behavior through conversation, nonverbal cues, media, and other methods, although the instruction may be quite subtle. Parents may never tell their children that girls play with dolls and boys play with guns, yet the children may pick up a variety of messages that convey this information. We have many roles that we adopt during life—child, student, mother, uncle, businessperson, daughter, friend, employer, and so on—but the sex role is one of the most critical to our identity and one that persists throughout our life.

A sociologist's interpretation of what Erikson saw would be quite different. It could easily be argued that sex-role socialization, or teaching, had already taken place by the time the children reached the age of ten and participated in the experiment. The girls had already learned from their parents, friends, and teachers how to play with dolls and playhouses; the boys had learned to play with trucks, guns, building blocks. The children were not, therefore, expressing a consciousness of their body structure, but what they had learned about appropriate sex-role behavior.

The idea that sex roles are learned and not biologically determined is buttressed by convincing studies of incorrect assignment of sex (some prefer the term gender) roles of children at birth because of physical abnormality, hormone imbalance, etc. Biological girls can be taught to behave like boys and vice versa.

The appeal of this approach is that it implies alternative sets of role behavior can be taught and that change is possible. Girls can be taught to be more assertive and adventurous, and boys can be taught to be more quiet and sensitive to human relationships. If Erikson conducted his experiment again this year with "liberated" children, the results might be quite different.

READING

Erik H. Erickson. *Childhood and Society.* New York: W.W. Norton, 1963, pp. 97-108. "Genital Modes and Spatial Modalities."

-or-

Erik H. Erikson. "Inner and Outer Space: Reflections on Womanhood." *Daedalus,* Spring 1964: 582-606.

Bonnie Loyd. "Woman's Place, Man's Place." *Landscape* 20, no. 1 (1975): 10-13.

THE INTERIOR SPACE OF THE HOME

Landscapes can tell us much about culture. The ways people shape the landscape reflect not only their ethnic origins but also their technological levels and economic circumstances. Landscapes also are clearly symbolic forms. As part of the landscape, the home symbolizes ideas about how people should live, how family members should relate to one another, and the ways occupants should relate to the outside world. These ideas can be demonstrated by studying examples of home interiors in different times and places.

The middle- and upper-class Chinese home for many centuries symbolized Confucian ideas about the woman and her place in society. She was referred to as "nei ren," the person on the inside. The house took a rectangular form bounded by exterior walls, inside of which was a series of courtyards and buildings placed one behind the other. The women's quarters were located farthest from the street, along the windowless back wall, separated from other buildings by courtyards and accessible only from the inside. This form made concrete the extreme isolation of women from the outside world advocated by Confucian theorists. The architecture served as a real and symbolic barrier to participation in the outer world and especially limited contact with strange men. It helped to maintain the woman in a position subservient to her husband and ensured that her husband's lineage would be protected because other men would not have opportunities to father her children.

Through the interpretations of Pierre Boudrieu, the Berber house in Algeria provides us with another example of ways in which the interior of a dwelling symbolizes cultural values. The basic rectangular form of the house is divided into two levels. The slightly higher level symbolically represents light and culture. Linked with men and male honor, it is associated also with fire, objects made with fire, and it is used for guests. Grain to be ground for food is stored in the upper part of the house. The lower part of the house is associated with darkness, with nature, and with women. It serves as a stable, and here are stored natural materials such as wood, water, and the grain to be used as seed. Women are responsible for most of the objects in the lower part, and usually they sleep in a loft over the stable. Activities associated with nature, such as sexual intercourse, childbirth, and death are also associated with the lower part of the house. Within the upper part of the house symbols of men and women are recognized. For example, the inside the front door, out of direct light, is called the wall of sleep, the tomb, or the maiden. In construction of the house there is also sexual division. Although men plaster the exterior walls, the interior walls are whitewashed and hand-decorated by women.

We may not think about or recognize such symbolism in the American home, but a brief study of writings and social experiments from the late nineteenth and early twentieth centuries in the United States shows how alternative values can be expressed in home interiors. Popular magazines, such as the *Ladies' Home Journal,* and writers like Catherine Beecher (*The American Woman's Home)* idealized the woman's duty to be the spiritual center and efficient manager of the home. The home was portrayed as a retreat from the world for the husband and the center of domestic harmony. These values were symbolized in designs such as three of Frank Lloyd Wright's published in the *Ladies' Home Journal.* High walls and leaded windows cut off the outside for a truly protected environment. Within, continuous open space centered on the family hearth, a symbolic focus of harmony and togetherness.

The dwellings of utopian communities are a strong contrast to these designs. Those developed by the followers of Robert Owen, Charles Fourier, or the Amana colonists in Iowa show their concern for equality. They built various kinds of communal housing, usually incorporating private space for sleeping (and sometimes family living), but with communal areas for cooking, dining, and child care. In such environments domestic work was shared, rather than viewed as the responsibility of the isolated woman. In one such community, the Women's Commonwealth in Texas, a group of religious women developed a hotel as their residence and as a commercial enterprise. They made several innovations to reduce work isolation for women by integrating private and public spaces. Kitchens flowed into open areas and courtyards so that there were opportunities for social contact during work. Corridors near public rooms were broadened into galleries where work and social mixing could be integrated.

Women writers and reformers such as Charlotte Perkins Gilman or Melusina Fay Pierce (the latter, founder of the Cambridge Cooperative Housekeeping Society) advocated kitchenless houses or apartment hotels in cities with cooperative kitchens, communal cafes, and shared children's nurseries and play areas. They say these designs as contributions to freeing women from full-time work in isolation in the home and helping to bring them into wider social participation. Although their designs provided broader opportunities for some women, they did not resolve the problems for lower-income women and their families (particularly those women who might be employed to provide food services), nor did they resolve the question of household members sharing domestic tasks. Such issues have recently re-surfaced in discussions about women and housing. Designers (especially women architects) are introducing more flexible uses of space, especially the harmonizing of public and private areas. They are responding to women's desires for personal space outside the kitchen, to the needs of households other than two-parent nuclear families, and to the increasing practice of sharing housework among family members.

READING:

Cynthia Rock, Susana Torre, and Gwendolyn Wright. "The Appropriation of the House: Changes in Housing Design and Concepts of Domesticity." In *New Space for Women,* Ed. by G. Wekerle, R. Peterson, and D. Morley. Boulder: Westview Press, 1980, pp. 83-100.

The reading shows the relationship between the way the houses have been designed and socially sanctioned ideas of sex roles and domesticity. It traces thinking on the use of household space from the late nineteenth century to the present, drawing on such sources as women's magazines, the writings of home economists and feminist architects, and views expressed at the 1956 Women's Congress on Housing. It is illustrated with floor plans and photographs.

WOMEN'S CONTRIBUTIONS TO THE LANDSCAPE OF THE HOME

The association women and home spaces is a common theme in our social mythology. We do not know whether women find affinity with interior spaces because of innate physical and psychological tendencies or because of their socialization. In the past few years many of our beliefs about the "natural" proclivities of women have been exploded as women venture into new activities, and perhaps the women-and-the-home belief is also ripe for exposure as a social convenience rather than as part of a natural scheme for the divison of labor. Certainly, many women have questioned their roles as homemakers and the social isolation that single-family homes in suburbia can cause.

Nevertheless, the assumptions that women belong in the home, want to be in the home, and have aptitude for household activities have existed for centuries in many cultures, and women have been primarily responsible for creating the landscape in the home. To overlook this is to overlook the contribution of millions of women in shaping this landscape for themselves and their families.

Interiors are malleable and can be shaped by the inhabitants to express their age, ethnicity, income, and education even more visibly than the exterior of the home. Our homes, like the outdoor landscape, represent the impact of our culture. They reveal who we are, and we decorate them accordingly. Mapping selected interior details, such as plants, posters, or types of furniture could yield a sensitive guide to culture areas and change in the city. Residential interiors are heavily used spaces in this society; they are laden with social meaning by their users; they provide a rich source of material on culture and behavior. Although interiors express the characteristics of all the residents, it is the woman who usually has assumed the major responsibility for arranging the interior for the family. Women have shaped the interior landscape through several different roles. Among these are decorator, consumer, housekeeper, and artist.

Decorating the interior landscape has been a major task for American homemakers, whether the decorating was done with the help of a professional decorator or was simply insuring that the family has enough bedding. The title of homemaker suggests creating a home within the architectural structure of the house. Among the affluent the job may involve buying furniture, wallpaper, carpets, and curtains that are color-coordinated and in the latest style and hiring workers to do carpentry and painting. But even in a more modest home the woman moves a chair, hangs a calendar, or buys a knickknack. Even among young, liberated, working couples, decorating remains primarily a female activity. By extension, interior decoration as a profession has become a primarily female field.

Economic consumption has been another key activity of women, and one that is generally underrated. Economic analysis tends to analyze production and assume that consumption will somehow take place. While many household tasks, such as ironing, cooking and washing, have become simpler and less time-consuming, buying has become more time-consuming and intricate. There are endless new styles, products, and possiblities for household goods along with pressures to try them. John Kenneth Galbraith explains that the administration of the household must become more and more complex and involve more and more products in order to support our growth economy. Household goods often are replaced, not because they are worn out, but because they are out of fashion. The women's magazines devote their pages to household advice ranging from major architectural renovation to making curtains—all encourage consumption. The advertisements make the case even more convincingly, because they promote an extensive array of products, such as floor covering, furniture, linens, appliances, and cleaning products. The modern homemaker's tasks is more complex than mere decorating and maintenance. She or he is the major consumer for the household. The homemaker assembles the household goods for the family. Lee Rainwater explains that for the middle class the battle to achieve a home secure against outside threats is over, and the home becomes a place to "elaborate in personally expressive ways." In this culture elaboration depends heavily on buying.

Through housekeeping women historically have managed the interior landscape. Washing, polishing, dusting, and picking up have influenced the character of the scene on an everyday basis. The French existentialist, Gaston Bachelard, speaks about the significance of housework in his book, *The Poetics of Space* (1969):

> A house that shines from the care it receives appears to have been rebuilt from the inside; it is as though it were new inside. In the intimate harmony of walls and furniture, it may be said that we become conscious of a house that is built by women, since men only know how to build a house from the outside.

Lewis Mumford in *The City in History* (1961) explains that housework emerged in the Baroque period because at this time furniture as decoration was reinvented. Mumford writes:

> To make up for lack of effective domestic work, a new type of housework was invented that took up the slack and enriched the ritual of conspicuous consumption. I mean the care of furniture. The fixtures of the medieval household were equipment: chairs to sit on, beds to sleep in: icons to pray before: so much and no more. Furniture is really a re-invention of the baroque period: for by furniture one means useless or super-refined equipment, delicate vases to dust, inlays and precious woods to polish, metal work to keep shiny, curtains to be shaken and cleaned, bric-a-brac and curios to be washed.

The home landscape also has been embellished by women as artists. Women had few opportunities in the past to enter the arts professionally. Their energy was channeled into home arts instead, so in the home we find much of American folk art. Homemakers served as both patrons by commissioning furniture, utensils, and household goods from local craftspeople, and as artists themselves. Well-trained young women in the past were skilled in the arts in order to enhance their homes. They learned sewing, crocheting, quilting, knitting, weaving, dying, and needlework as well as interior decorating. If the girl went to finishing school, she might also practice painting and drawing. Sewing, quilting, embroidery, and knitting were all common household tasks—but in the hands of a skillful person they become art.

Quilts are an example of an item of material culture that can be analyzed in much the same way as exterior landscape features. Quiltmaking was known centuries ago in China, North Africa, and the Near East, and in this country quiltmaking is as old as the first settlement. Necessity first led American women to piece together scraps of old clothing to make bed covers, but distinctive styles in stitching and patterns developed and were carried across the country. The distribution and diffusion of these patterns is a study in the social history of the country. A quilt often represented a larger investment of time and skill than any other item a woman made. The quilt might be completed to mark a special event in the life of the family such as a wedding or twenty-first birthday, and its designs and fabrics held many family and community memories. The quilt was admired for years and occupied a significant location in the home landscape.

According to the geographer Carl Sauer, women were probably the first to seek and build shelters. Although women may have retained control of the interior of the home since

that time, the design of the structure they live in has been dominated by men. Only a small portion of the homes in America are designed by architects, but we can assume these serve as functional and aesthetic models for many of the others. (Most homes are built by construction companies that mass produce homes based on standard floor plans or designs from pattern books.) The field of architecture has been heavily dominated by men. Today only 2% of architects are women.

So the traditional landscape modifications created by women have been primarily within the architectural shell. Women have shaped habitable spaces for their families by decorating, economic consumption, housekeeping, and pursuing arts and crafts. In doing so they also have created an expression of their household's tastes and social background —an interior landscape that is a rich portrait of a segment of society.

READING:

Lewis Mumford. *The City in History*, New York: Harcourt, Brace & World, 1961. Chapter 10, pp. 281-287, and Chapter 13, pp. 382-385.

Yolanda Murphy and Robert F. Murphy. *Women of the Forest*. New York: Columbia University Press, 1974. Especially Chapter 5.

MODULE 3:
GEOGRAPHIC PERSPECTIVES ON SOCIAL CHANGE: THE EXAMPLE OF WOMEN IN CRIME

by George F. Rengert and Janice J. Monk

In the geographic study of social change, few topics challenge the traditional lines of inquiry as much as does the geographic analysis of crime. Perhaps this is because we think of crime as irrational behavior—and therefore outside the geographer's quest for logical explanation of spatial patterns. In fact, many crimes, especially property crimes, are rational decisions that involve spatial choice. The spatial and temporal distributions of those crimes are part of the social, economic and cultural landscape in which we live. The geographic perspective helps us understand the basis of that distribution. An introduction to some aspects of the geographic view of crime is presented in the following pages. First we will examine concepts useful in analyzing criminal behavior to illustrate how geographic interpretations can help us understand a complex social problem.

OBJECTIVES

1. To recognize and interpret spatial components in criminal decision making.
2. To suggest reasons why people who live under similar environmental stress may choose different coping actions.
3. To explore the spatial patterning of urban crime.
4. To use the concepts of awareness and action spaces in analyzing spatial search behavior.

SPATIAL ASPECTS OF CRIMINAL BEHAVIOR

The geographic perspective is a spatial perspective. It may be used to examine spatial patterns over broad areas or focused on the spatial behavior of a single individual going about a single task. In the following discussion, our attention is directed first at how individuals make decisions that have spatial components related to crime. Then we will illustrate the spatial pattern that results from many of these decisions by many individuals in an urban area. We limit the discussion to crimes with a definite spatial component: "property crimes" such as burglary, larceny, auto theft, and robbery. Later we will focus on burglaries in particular.

For a criminal act to take place, there must be spatial association between two aspects of the criminal process: a person with criminal tendencies must come in contact with an opportunity to commit a crime. Thus we might think of criminal behavior as the product of two interrelated decisions:

1. The Decision to Commit a Crime, which will lead to
2. The Decision of How and Where to Commit the Crime (In the case of situational crimes, the second decision will precede the first.)

The first decision, whether or not to commit a crime, is associated with a set of factors influencing the criminal tendency of an individual. Factors such as age, sex, income and social situation are all important aspects that have been found statistically related to an individuals' inclination toward crime. For example, economists have shown that people in lower income brackets have a higher tendency to commit reported property crimes than people with higher incomes. Sociologists have found that women in general tend to commit fewer crimes than men.

The second decision concerns the planning of how and where to commit the crime. This can be referred to as locating an "opportunity" for crime. In the case of situational crimes, that is, where an individual happens upon an excellent opportunity, such as an unlocked or open apartment door, or an automobile with the keys left in the ignition, then the how and where may become obvious and the decison is whether to take advantage of the apparent opportunity. Thus the order in which the decisions are made may be reversed; however, both must be made before a criminal act is committed. Making two or more interrelated decisions that sequentially lead to spatial behavior is termed a *spatial decision process.*

From a geographic perspective, the important point is that there is a great deal of spatial variation the arrangement of the factors associated with these two decisions. For a large group of people such as might live in a section of a city, we might think of the crime rate as being related to the spatial correspondence of the two sets of factors: criminal tendency of a population and criminal opportunity within the area. For example, in areas of cities where criminal tendencies are high, residents and shopkeepers often take elaborate precautions to eliminate crime opportunities. In these areas we may see bars over windows and merchandise behind rather than on top of counters. On the other hand, in areas where individuals have lower crime tendencies, home owners may not even lock their doors when they go out at night. Over space, we observe a tradeoff between high tendency-low opportunity areas where residents take great care to secure their person and property, and low tendency-high opportunity areas where residents are less careful since there are fewer perceived risks in the region. Viewed in this perspective criminal behavior can be seen as purposeful rational behavior. It therefore can be conceptualized as a decision process with important spatial components.

The spatial components include the landscape of spatial variations in crime patterns and in factors related to those patterns. In addition they include variations in individual responses to crime in urban areas. Scholars consistently have found that the spatial distribution of crime rates is closely associated with the spatial distribution of income levels. It has been observed that although every city has a unique spatial distribution of income and crime, there are recurring patterns. One spatial regularity is termed the *crime gradient.* On this gradient, crime rates tend to be highest toward the center of the city and to decrease outward in any direction. Geographers have found that income of residents tends to increase as one moves outward from the center of the city also. Therefore, there seems to be an inverse spatial relationship between income and crime in cities.

Next, let us consider variations among individuals whose behavior determines the crime patterns. At this level, we must ask why some people who seem to be very similar to others choose criminal behavior while others do not. For example, why do all poor people not turn to property crimes to supplement their incomes, since this might be assumed to be economically rational? With a little reflection, we can recognize that there are many other alternatives in an economically stressful situation. We might consider these alternatives as lying on a continuum.

BEHAVIORAL CHOICES

Examine the following list of behavioral choices:

Attack oneself:
1. Suicide
2. Drug Addiction
3. Alcoholism

Live with the system (using coping mechanisms):
1. Fundamentalist religions
2. Ethnic solidarity groups
3. Political activism

Attack the system:
1. Revolutionary behavior
2. Passive resistance
3. Crime

You may want to add other choices to this list or to change the exact placement of choice. In any case, study of the spatial arrangement of these behavioral choices would probably show the incidence of all to vary from high levels in central-city, low-income areas to low levels in outlying areas.

One of the most interesting facets of this continuum is the way people in similarly stressful environments differ in their choices. For example, older people more frequently select those at the top or in the center of the above list and young people are more likely to choose from either the top or the bottom of the list. In the past there have been predictable gender differences in that men have ranged throughout the continuum in their behavioral choices whereas women have tended to use the coping mechanism of the center. This follows from women's early and steady socialization as guardians of the *status quo* and men's socialization as risk-takers. (Risk-taking is more associated with the choices at the end of the continuum.)

Some of these generalizations, and particularly the ones about gender appear to be changing over time. Recently, there has been a marked increase in reported female drug addiction and alcholism. At the other end of the continuum, many of the leaders of the contemporary revolutionary groups are women, as the name change of one such group from "Weathermen" to the "Underground Weather Organization" might imply.

Table 1.
TOTAL ARRESTS FOR FBI INDEX CRIMES

Year	Total	Total Male	Percent Male	Total Female	Percent Female
1977	1,986,043	1,587,418	79.9	398,625	20.1
1976	1,787,106	1,432,374	80.2	354,732	19.8
1975	1,901,811	1,531,100	80.5	370,711	19.5
1975	1,474,427	1,194,616	81.0	279,811	19.0
1973	1,372,220	1,115,139	81.3	257,081	18.7
1972	1,417,115	1,161,910	82.0	255,205	18.0
1971	1,397,304	1,156,325	82.8	240,979	17.2
1970	1,273,783	1,058,169	83.1	215,614	16.9
•	•	•	•	•	•
•	•	•	•	•	•
•	•	•	•	•	•
1965	834,296	722,324	86.6	111,972	13.4

Data Source: FBI, Uniform Crime Reports, U.S. Government Printing Office, Washington, D.C., 1965-1977.

We do not know all the causes of sexual differences in criminal behavior or of changing crime patterns. However, our understanding might be improved by examining factors that influence spatial behavior because we have noted that criminal acts involve spatial decisions.

In general, we know that men and women behave differently in space. Innate biological attributes and the characteristics of their environment seem less important in explaining these behavioral patterns than the ways in which men and women are socialized to use space. Male predominance in crime appears to result from what "maleness" implies about social position, supervison, and other social relations and the ways these affect spatial behavior. Consider: boys and girls live in the same homes, in equal poverty with the same parents, and in the same neighborhoods (which are equally lacking in facilities for organized recreation). Can these conditions of the social environment be considered as "causes" of delinquency if boys become criminal and their sisters do not? Is it perhaps more "causal" that boys are supervised less carefully than girls and that efforts to give them socially approved behavior patterns are less consistent?

Studies in socialization contend that women engage in socially deviant behavior such as crime less than men because women are taught to conform to the norms of society or to the expectations of others. Boys are encouraged to be assertive, self-reliant and creative, whereas girls are taught to be nurturant, non-assertive and dependent. In spatial terms, we find that most young girls are not encouraged to explore or travel outside the control of parents. So it is not surprising that there are sex differences in spatial behavior that are evident in commuting, shopping and other common activities —and in criminal behavior.

Furthermore, when women do take part in crime, the crimes they tend to commit are closely related to their socialized roles in Western society. Female spatial activity patterns in Western societies tend to orient around the home, shopping, and recreation areas. Since opportunities for property crimes are very limited in the home and recreation areas, it is not surprising that women are much more likely to be arrested for a crime associated with shopping (shoplifting) than for any other crime. Nearly twenty percent of all crimes committed by women are shoplifting type crimes that are listed as larceny in FBI reports. Men on the other hand are more likely to explore new areas enter strange buildings, and engage in physical confrontations in their property crimes. The greater use of extended space by men allows for a much greater mix of crimes than is the case for women who are taught to play it safe and remain in familiar places. Less than five percent of arrested men are arrested for shoplifting; they are much more likely than women to be arrested for crimes such as robbery, burglary, and auto theft.

THE EFFECTS OF SOCIAL CHANGE ON FEMALE CRIME

Let us turn now in more detail to changing crime patterns and the criminal's spatial behavior. Recently it has been suggested that the increase in female crime rates is caused by the contemporary movement to establish equal rights. It is charged that "women are becoming just like men." But are they? Although women are much more mobile today than a few years ago, they are still taught to play it safe. Most girls are taught not to explore unfamiliar areas, possibly for fear they are too vulnerable to harm. Is this constraint evident in the behavior of women criminals? Are social changes causing them to become more like male criminals?

To explore these questions, we need to introduce two new concepts—*awareness space and action space*. An awareness space is defined as the part of the spatial environment of which a person is generally aware. Action space is the part of their awareness space which they actually use on a regular

basis. It typically includes the area regularly traversed in the daily routine of going between home and school or work, and the evening or weekend paths to recreation places. Home is the primary node about which most travel centers. If a person does not work outside the home or attend school, for whatever reason, his or her action space tends to be restricted.

We must keep in mind that a person cannot use something purposefully without awareness of it. And the degree of use reinforces awareness. The greater the awareness, the higher the likelihood that an element of the space will be found useful. This is true of both criminal and non-criminal elements of society.

Criminals practice very little spatial exploration of unfamiliar territory when choosing a crime site or victim. In most violent crimes there may be no spatial choice involved. Usually these crimes take place within the home or within a block or two of home. Property crimes such as robbery and burglary are more spatially dispersed. Yet they correspond closely to the criminal's action spaces. Seldom will a site be chosen more than a city block or two from a primary node or path of the criminal's action space.

In choosing a crime site, a criminal is attempting to find a portion of the environment that fits his or her preconceived notions of an acceptable crime site. Although the search process takes place along and around familiar action spaces, portions of the action space are not considered since prior knowledge leads to a judgment that they do not present acceptable crime sites (Figure 1). These areas may contain no people or buildings or may be judged too dangerous for criminal activity. The remaining area judged to contain crime possibilities and considered in the search for a crime site is termed the criminal's *search space.* Thus if awareness space is the set of all places familiar to an individual, the action space and search space are smaller subsets of these places that are used in spatial behavior.

Figure 1.

ACTION AND SEARCH SPACES

It is clear that the spatial extent of an individual's awareness and action spaces will affect that person's criminal and noncriminal behavior. This helps explain the criminological dilemma of why *poor* people tend to victimize other poor people rather than travel to wealthy sections of the city that contain more money and property. And it helps to explain why women tend to specialize in property crimes around shopping areas (such as shoplifting).

However, some people feel that this pattern is changing and that females will soon match males in the type of crime as well as in crime statistics. They point out that the automobile has allowed increasing numbers of people to have relatively easy access to wider areas of our environment. In addition, they see greater spatial freedom for women resulting from the lowering of the birthrate and from the increasing proportion of women who work outside the home. Therefore, the extent of women's action spaces may be approaching that of males. It has been suggested that this expansion may give rise to an increase in the amount and variety of female crime.

The question of whether women are becoming like men in their criminal as well as in their noncriminal spatial behavior is an intriguing one. So far it has not received a great deal of study. However, one geographical investigation of female burglars in Philadelphia analyzed whether females were adopting male behavioral patterns when they committed burglaries, a typically male crime. The study examines the spatial aspects of burglary—the distances that burglars travelled to commit the crime, and the kinds of places they selected for the activity. Data for the study were collected from court records that listed the address of the criminal, the location of the crime, and the sex of the criminal.

The analysis of these data demonstrates that female burglary patterns in general are more spatially constricted than those of males. That is, female burglars do not tend to use as much of the city for burglary as their male counterparts. It was expected that female burglary sites would be clustered in the Central Business District of Philadelphia. This expectation was not met. Rather, female burglary sites tended to be nearer the women's homes. Females committed burglaries nearly a quarter of a mile closer to their homes on the average than male burglars. This is a striking difference when one considers that the average distance travelled by all burglars is less than two miles.

PRISON AS SOCIALIZATION FOR WOMEN

Although the childhood socialization of female children fosters shorter, more focused travel behavior, we might suspect that female convicts may be less typical since prison, by definition, removes one to a different society. A brief look at women in prison shows it is, indeed, an abrupt spatial change for them. This is partly a function of spatial planning: all but nine states have more than one institution for male offenders, yet none operates more than one penal institution for women. Eight states have no female facilities. Although seventy percent of the women in federal prisons have children, none of these prisons have provisions for women with children. After a prison experience, women normally will have experienced a wider spatial environment since they are removed from familiar surroundings during incarceration. Also, because there are so few institutions for women, they are much more likely to be sent farther from their homes than male prisoners. Their lives are much more disrupted and they experience greater difficulty keeping track of their possessions and families. There would seem to be considerable reason to to escape.

Given the greater spatial separation of women from their homes, one might expect them to be more escape-prone than people located within easy visiting distance of friends and relatives. The opposite seems to the case. Women are much less escape-prone than men. Ironically, women prisoners are given much more spatial freedom than men. In most states they are allowed more trips outside the prison than male prisoners. Furthermore, women's prisons are much less security-oriented institutions than are men's prisons—seldom do we find gun towers, concrete walls, and barbed wire surrounding women's prisons. Again we see that women criminals are not adopting male behavioral patterns even when incentives and opportunities to do so may be greater.

CONCLUSION

To date there appears to be no evidence from a geographic perspective to support the view that the contemporary drive for equal rights for women is changing female criminal behavior. Women criminals do not mirror the spatial behavior of men even when they commit the same type of crime. Once imprisoned, convicted women criminals have proven to be less inclined than men to escape although incentives to do so are great. It seems that socialization may dominate female spatial choices even when social change seems to offer alternatives.

We are left with the problematic increasing crime rates for women and perhaps should end this reading with the reminder that crime rates for men also have increased in recent years. It seems logical that both sexes might be responding similarly to the possibility that there are increasing opportunities for crime, a lessening of deterrents to it, or simply that there is an increase in the number of people in the age bracket most commonly involved in crime (the young adults of the "baby boom" generation). Regardless of the causes of crime, it scarcely seems an appropriate solution to restrict the spatial or economic liberty of one sex because some of them might take advantage of this liberty to commit crimes.

MODULE 4:
LOCATIONAL DECISION MAKING: THE CASE OF THE DAY CARE CENTER

by Janice J. Monk and Arlene C. Rengert

All our lives we make locational decisions—where to live, where to shop, where to go to school, where to take a vacation. Businesses and public agencies also make locational decisions. Where should the new bank be? What about the pizza place? Or the family planning clinic? Geographers study the locational decisions people make and also help public and private agencies make decisions. In their study they use various concepts and methods, some of which will be explored in this module. We have chosen the day care center as an example for analysis. We will examine the provision of centers in a community and the decisions of individual families choosing a center.

OBJECTIVES

1. To understand how the concepts of efficiency and equity can be applied in locational decision making.
2. To become aware of how the concepts and methods of time-geography can be applied in analyzing spatial distributions.
3. To suggest factors that might be considered in locating family services, using day care centers as an example.
4. To analyze maps of community and census variables to select sites for new service centers, based on equity and efficiency criteria.
5. To select day care centers for a given set of families by analyzing distribution maps and transportation options.
6. To consider the influence of the time-space organization of society on family activities and decisions.

EFFICIENCY AND EQUITY IN LOCATION

In locational planning geographers can pursue two quite different goals—efficiency and equity. *Efficiency* goals are concerned with maximizing the *total* benefits from a given quantity of resources. The question of the distribution of benefits among users is not considered. In the case of a public service, an efficient location might be defined in terms of the aggregate travel costs to schools of all the students. The geographer recommending an efficient site will try to minimize the aggregate amount of travel required of students. *Equity* goals are quite different. Equity implies fairness or justice in the distribution of society's benefits and costs. Users are considered as individuals, rather than everyone added together. The key equity question in a locational problem is *"who* gets what, where?"

When making decisions about locating services for people who are spatially separate and who have different characteristics, the planner faces a problem. Efficiency and equity goals usually cannot be maximized simultaneously. The most efficient location could result in a grossly inequitable distribution, and might lead to conflict in a community. On the other hand, pursuing the goal of equity alone could cause efficiency to shrink to the point where benefits may be far beyond the ability of the community to pay. The major policy question thus is can a society afford equal treatment of its citizens when resources are scarce, or should it strive for system efficiency, creating inequalities but possibly at higher levels of livelihood for all?

As a case, let us consider the location of day care centers for children. To be fair, each family should have equal access to these facilities. However, this would be impossible unless centers were to be located so that every family has access to them within reasonable travel time or distance. Even so, the question arises as to whether families living in spatially clustered residences should be forced to travel farther to a day care center so that it can be located within a feasible distance of a family (or group of families) residing in an outlying area. In other words, should everyone be made to travel farther so that a few outlying families do not have to travel so far? Here, total system efficiency would be sacrificed in order to achieve greater equality in travel distances to day care centers. Is this fair? Equitable? The greatest good to the greatest number? Should it be government policy to see that everyone can be served?

THE NEED FOR DAY CARE CENTERS

In planning the development and distribution of services, we have first to consider the need for them. Is the demand growing or declining? Who will be the clients? What special problems might arise because of the nature of the clientele?

You might think that the decreasing birthrates we have experienced would lead to a reduction in the demand for day care centers. On the contrary, the provision of this service has become a question of increasing importance. Consider the following ten facts.[1] They will help you understand the extent of the need for services, and something about the potential clients.

1. About 40 million women were in the work force in 1977. They constituted more than two-fifths of all workers.
2. Women accounted for nearly three-fifths of the increase in the civilian labor force between 1967-1977.
3. A majority of women work because of economic need. Nearly two-thirds of all women in the labor force in 1977

1. U.S. Department of Labor, Employment Standards Administration, Women's Bureau. *Working Mothers and Their Children.* Washington, D.C., 1977. Note: Here the term "working mothers" has been used in conformity with usage in this source. Elsewhere in the reading we identify these women as "women (mothers) who work outside the home."

were single, widowed, divorced, or separated, or had husbands whose earnings were less than $10,000 (1976).

4. The number of working mothers has increased more than tenfold since the period immediately preceding World War II, while the number of working women has only doubled. Fifty-one percent of all mothers with children under 18 were in the labor force in 1977.

5. The 5.3 million working mothers with preschool children in 1977 had 6.4 million children under 6. Only 149,000 children 3-5 years old were enrolled in licensed day care centers in 1975.

6. The more education a woman has, the greater the likelihood she will seek paid employment. Among women with four or more years of college, about three out of five were in the labor force in 1977.

7. However, women workers are concentrated in low paying, dead-end jobs. As a result, the average woman earns only about three-fifths of what a man does, even when both work full-time year round.

8. Among all families, nearly one out of seven was headed by a woman in 1977, compared with about one out of ten in 1967; thirty-seven percent of black families were headed by women.[2]

9. Among all poor families, nearly half were headed by women in 1977. About two out of three poor black families were headed by women.

10. It is frequently the wife's earnings that raise a family out of poverty. In husband-wife families in 1977, 10.4 percent were poor if the wife did not work; 5.2 percent if she was in the labor force.

What are the implications of these facts for the location of day care facilities? Many mothers working outside the home will have limited income to pay for care and for transportation to care centers. There are also many demands on their time. They go to work, shop, take care of the house and the children. The single mother is particularly stressed. Children's needs must be considered. Child welfare organizations believe it is not good for young children to travel more than half an hour daily. Also, children's developmental needs seem to require that they have an opportunity to become well acquainted with some area of space from which to explore. How can we take these considerations into account in locational planning? Should we try to achieve efficiency or equity goals?

IMPORTANT LOCATIONAL FACTORS

There are many factors which might be considered in deciding where to locate new day care centers or in evaluating whether an existing distribution is equitable or efficient. Here are some you might include:

The distribution children under five years of age.

The location of places of work.

Accessibility to transportation routes.

The means of transportation available to take children to centers.

The socio-economic patterns of the urban area (income, ethnic and racial distributions).

Can you add others?

Often there are regulations, such as zoning ordinances or rules and recommendations about site characteristics (for example, access to open space, location away from traffic) that influence the specific sites chosen.[3]

CHOOSING A CENTER

So far we have thought about locational decision making from the view point of providing the service. What about the decision the users will make? When a family is deciding on a day care center for their child, they will consider many factors. Quality of service will be important—for example, the facilities, the child-staff ratios, the qualifications of employees, their attitudes to education, and what agency runs the center. Cost will also be important. Day care centers in a midwestern city in 1978 averaged $25-30 per week for full time care, but some charged $46.00 per week and others had sliding scales depending on how many children in a family attended or on eligibility for government assistance.

There is another important set of considerations that relates to time and distance. What hours does the center open? How does this fit the family's schedule? How will the child get there? Will the mother, given traditional expectations about child care, be the one who takes the child, or will other family members help?

TIME-GEOGRAPHY AND CHOICE

Torsten Hägerstrand, a Swedish geographer, has developed a set of concepts to help us think about structuring time and space. His methods of analysis are useful for assessing what individuals can fit into a day and where they may go. If we define typical cases, we can also use his methods to plan desirable locations for community services.

In Hägerstrand's terms, every individual follows a *daily* (or monthly, or yearly, for example) *path*. Stops on this path, as at work or at the store, are called *stations*. Freedom to move from station to station is often restricted or subject to constraints. He identified three kinds of constraints: *capability constraints, coupling constraints,* and *authority constraints.* The first of these refers to a person's ability to do something. For example, we need to take time out to sleep and to eat. This limits our time to do other things in other places. Capability constraints also include our ability to move around—do we have access to a car, or will we use the bus or a bicycle, or walk? The means of transportation affect how far we can go in a specific time. Coupling constraints refer to the time when we have to be with other people at the same time to get something done. The hours a day care center is open or the hours an employer expects you to work are coupling constraints. Authority constraints can affect people's access to places. If a day care center has a limited maximum enrollment, or fixes the number of children it will accept in a specific age group, the parents cannot choose that center if these quotas are filled.

A person's daily path can be graphed in such a way that we can see what his or her spatial options might be. An example is shown in Figure 2. Linda works (at W) from 8 a.m. to 5 p.m. She is considering two day care centers (D1 & D2), each with the same hours, 7:45 a.m. to 5:15 p.m. D1 is farther from home (H) than D2, and she would prefer to use D2, since her young daughter would not have to make such a long trip. If she chooses D2, however, she will be late getting to work. Further, she cannot get from work to D2 before it closes. Her only choice, unlesss she changes her job or her house, or can travel faster, is D1.

These time-geography concepts and the example of Linda illustrate some of the difficulties that arise in establishing

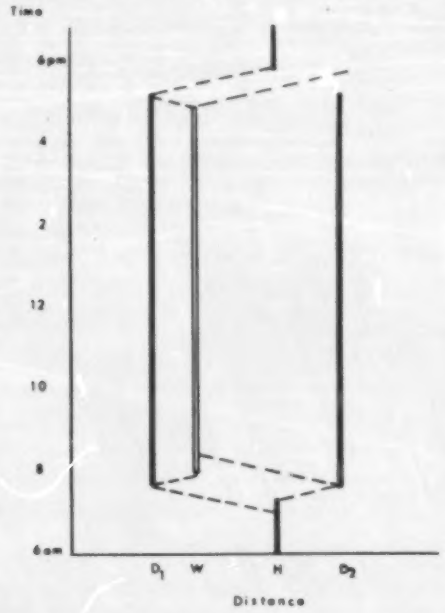
2. In the past the Census Bureau has designated a head of household to serve as the central reference person for the collection and tabulation of data for individual members of the household (or family). Because of social changes, the Bureau is developing new techniques that will eliminate the concept of head of household.

3. Karen E. Hapgood. *Day Care Centers.* American Society of Planning Officials Report No. 109, Chicago: 1971.

equitable distributions of services so that everyone has freedom of choice or reasonably equal degrees of access to services. How do you think the time-space organization of society might be changed to improve the situation for mothers who work outside the home and for the care of their children?

Figure 2.

Coupling Constraints on Selecting a Day Care Center



READING

Allan Pred and Risa Palm. "The Status of American Women: A Time Geographic View." in D. Lanegran and R. Palm (Eds.) *Invitation to Geography*. 2nd ed. New York: McGraw Hill, 1978.

If you wish to explore efficiency approaches in more detail, ask your instructor to suggest a suitable reading.

EXERCISE 1. SELECTING A DAY CARE CENTER

(See Figure 3, Map of Champaign-Urbana, Illinois. Letters and numbers in parentheses are grid references on the map.)

CASE DESCRIPTIONS

A. Assume you are the parents of two children and live on Fairlawn in Urbana (G.4). As James, the father, you work at K-Mart (D.2), beginning work at 1:30 p.m. and finishing at 10 p.m. As Patty, the mother, you work as a receptionist in a doctor's office at Carle Clinic (F.3) from 8 a.m. to 5 p.m. Your two children are ages 4 and 1. You both must work outside the home to maintain payments on your mortgage and car, and living expenses. What are your options for day care? Note any assumptions you made in reaching your solution.

B. Leonard and Margaret Cullen currently have no children (unless you count their cat, Peanuts). Margaret is a city planner whose office is in downtown Champaign (D.3). Leonard is an accountant who now works at an office in the Country Fair Shopping Center (B.3)—although his firm is quite likely to move to Route 45 south of town in Windsor Park (D.6) where a new office complex is under construction. They live in an apartment on McKinley between Green and John (C.4) but must relocate since they are expecting their first child and their building allows no children.

When the child is born Margaret will take a six-month maternity leave. After that they will need to use a child care center. Since the city planning job often involves early morning appointments and evening meetings, Leonard—with a fixed 9 to 5 schedule—will take primary responsibility in transporting the child to and from the center. They have one car, and would prefer to keep it this way, since they are environmentally conscious and concerned about energy.

With two incomes they can afford to buy a house anywhere Champaign-Urbana. Their main limitation is their time-space budget. Where should they look for a house? Note any assumptions you made in reaching your solution.

C. A single mother, Barbara Frank, and her three children, ages 12, 9, and 4, live off Philo Road on Michigan in Urbana (G.4). She works from 8 a.m. to 5 p.m. at the Solo Cup factory on Main St. (G.4) and is in a lower income bracket. The two older children are enrolled in public school and are able to take care of themselves until their mother returns. The eldest attends Urbana Junior High (F.4) and the nine-year-old is picked up by a school bus near home. However, Barbara needs to find a day care facility for her youngest. She has no car and no access to one. What are her options and how will she get there? Note any assumptions you made in reaching your solution.

D. Maria and Luis Garcia have moved out of Champaign-Urbana to St. Joseph, a small town about twelve miles to the east. By taking Interstate 74 they usually can reach Urbana in twenty-five minutes. Maria teaches at Urbana High (F.4) and likes to be at school at 7:45 a.m. Classes end at 2:45 p.m. Luis works in the Student Counseling Center at the university (near Wright and John Sts., E.4). from 8 a.m. to 4:30 p.m. They have a three-year-old daughter and cannot make satisfactory day care arrangements in St. Joseph. What are their options among day care centers in Champaign-Urbana? How can they organize their transportation? Note any assumptions you made in reaching your solution.

E. Jenny and David Olsen and their four-year-old son Mark live west of Prospect and just south of John in Champaign (C.4). David is an assistant personnel manager at Kraft (G.3). Jenny does not have paid employment outside the home, but she has a degree in political science and extensive volunteer experience with a major consumers' organization that has its midwest regional office in town. A national case is coming up in which the organization is heavily involved and Jenny's expertise is important. She will be needed at the office from 9 a.m. - 4 p.m. at least four days a week for the next couple of months. The office is located near Geen and Fourth Streets (E.4). The family has one car. What are their options for day care and transportation? Note any assumptions you made in reaching your solution.

EXERCISE 2. PROVISION OF DAY CARE IN CHAMPAIGN-URBANA

COMMUNITY DESCRIPTIONS

Champaign-Urbana is about 130 miles south of Chicago in the heart of Midwestern corn and soybean farming country. But it is mainly a university town. The population of the twin towns is 168,500. Almost 34,000 residents are university students, 4,500 are faculty or professional staff at the university, and 4,500 work there in other jobs. The university is centrally located in the community, part of the campus being in Champaign and part in Urbana. Although many of the students are single and live in apartments and dormitories on and around campus, there are also quite a few married students, and some of these people have children. Thus there are some students who would need access to day care for children.

In addition to the university there is a junior college,

Parkland, located on the northwest edge of town. It has over 7,000 students, many of whom are part-time, including parents with children who would need day care.

Employment statistics show that government agencies account for about 40 percent of the jobs in town. Obviously many of these are university employees. Some of the others would be in the state agencies that are near the campus. Others would be in offices in downtown Urbana or downtown Champaign, but some would be dispersed around the community, for example in public schools.

The next largest category of employees is in trade—about 15,000 people. There are several major business areas that would be the work sites for these people. In addition to downtown Champaign and downtown Urbana (both of which are declining business areas), there is a campus town, a large shopping mall on the north edge of town (Market Place) and a smaller shopping center, Country Fair, on the Western edge of town. There are also strings of commercial businesses on the main thoroughfares—especially University and Prospect Avenues, Route 45 and the Philo Road.

Service industries provide jobs for almost 10,000 people. Most of these jobs would be scattered. Those in banks and insurance agencies, for example, are mainly in the shopping districts. One large hospital and clinic, Carle Hospital, on University Avenue, is a major employment site.

Manufacturing jobs account for about 6,500 people. Many of these would be jobs for men. The biggest industrial plants are in the north and northwest portions of town and are identified by name on your map of day care centers.

The three maps of census data you have give you an idea of the economic levels of people in different parts of town and the distribution of people who might want day care service (Figures 5, 6, 7). The low-income areas in the southern half of the community would mostly include students. The low-income area in the northern half is principally a black residential area.

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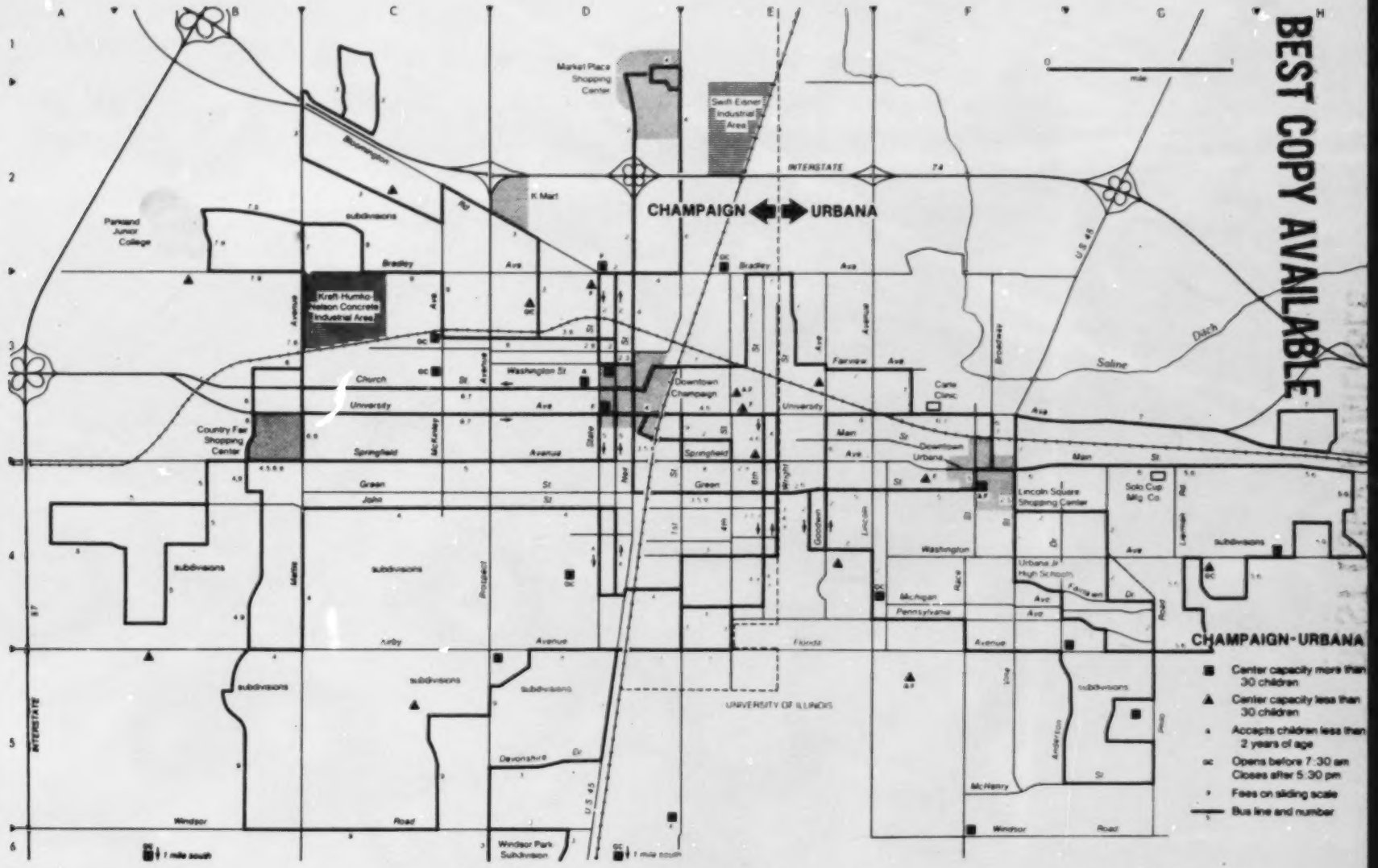

Figure 3.

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Figure 4.

MASS TRANSIT SCHEDULES

2 — NORTHBOUND

LINCOLN	PLAZA PHILO	McKEN ANDER	PERIN RACE	GREEN WRIGHT	CHURCH NEIL	MRKT PLACE
6 16	6 22	6 28	6 34	6 40		
				6 45	R6 53	R7 00
6 43	6 50	6 57	7 03	7 10	7 19	7 27
7 03	7 11	7 19	7 26	7 35	R7 44	R7 53
*7 16	*7 24	*7 32	*7 39	*7 48	*7 57 OFF	
7 43	7 50	7 57	8 03	8 10	8 19	8 28
8 08	8 15	8 22	8 28	8 35	8 44	8 53
*8 23	*8 30	*8 37	*8 43	*8 50 OFF		
8 43	8 50	8 57	9 03	9 10	9 19	9 29
9 23	9 30	9 37	9 43	9 50	9 59	10 08
9 53	10 00	10 07	10 13	10 20	10 29	10 38
10 23	10 30	10 37	10 43	10 50	10 59	11 08
10 53	11 00	11 07	11 13	11 20	11 29	11 38
11 23	11 30	11 37	11 43	11 50	11 59	12 08
11 53	12 00	12 07	12 13	12 20	12 29	12 38
12 23	12 30	12 37	12 43	12 50	12 00	1 08
12 53	1 00	1 07	1 13	1 20	1 29	1 38
1 23	1 30	1 37	1 43	1 50	1 59	2 08
1 53	2 00	2 07	2 13	2 20	2 29	2 38
2 23	2 30	2 37	2 43	2 50	2 59	3 08
2 53	3 00	3 07	3 13	3 20	3 29	3 38
3 23	3 30	3 37	3 43	3 50	3 59	4 08
3 53	4 00	4 07	4 13	4 20	4 29	4 38
4 33	4 40	4 47	4 53	5 00	5 09	5 19
5 16	5 22	5 28	5 34	5 42	5 50	5 58
5 46	5 52	5 58	6 04	6 12	6 20 OFF	
*6 46	*6 52	*6 58	*7 04	*7 12 OFF		

2 — SOUTHBOUND

MRKT PLACE	CHURCH NEIL	GREEN WRIGHT	FLA VINE	McKEN ANDER	FLA PHILO	LINCOLN
R6 25	6 33	6 45				
		*6 45	*6 53	*6 58	*7 05	*7 12
R7 00	7 07	7 14	7 21	7 25	7 32	7 39
7 29	7 36					
		7 48	7 57	8 02	8 08	8 14
R7 53	8 03	8 12	8 20	8 25	8 32	8 39
8 34	8 44	8 53	9 01	9 06	9 13	9 20
9 04	9 14	9 23	9 31	9 36	9 43	9 50
9 34	9 44	9 53	10 01	10 06	10 13	10 20
10 04	10 14	10 23	10 31	10 36	10 43	10 50
10 34	10 44	10 53	11 01	11 06	11 13	11 20
11 04	11 14	11 23	11 31	11 36	11 43	11 50
11 34	11 44	11 53	12 01	12 06	12 13	12 20
12 04	12 14	12 23	12 31	12 36	12 43	12 50
12 34	12 44	12 53	1 01	1 06	1 13	1 20
1 04	1 14	1 23	1 31	1 36	1 43	1 50
1 34	1 44	1 53	2 01	2 06	2 13	2 20
2 04	2 14	2 23	2 31	2 36	2 43	2 50
2 34	2 44	2 53	3 01	3 06	3 13	3 20
3 04	3 14	3 23	3 31	3 36	3 43	3 50
3 42	3 52	4 01	4 09	4 14	4 21	4 28
4 09	4 19	4 29	4 37	4 42	4 49	4 56
		*4 40	*4 48	*4 53	*5 00	*5 07
4 40	4 51	5 00	5 10	5 17	5 25	5 32 OFF
	*5 11	*5 20	*5 30	*5 37	*5 45	5 52
5 21	5 31	5 40	5 48	5 53	6 00	6 07 OFF
6 00	6 10	6 19	6 28	6 33	6 39	6 43
	*6 22	*6 40	*6 48	*6 53	*7 00	*7 07 OFF

* These trips do not operate on Saturday.

R These trips operate from Downtown Champaign to Market Place via the Red Line and from Market Place to Downtown Champaign via the Blue Line.

3 — NORTHBOUND

LYNDHURST WIND	PROSPECT DVNSR	FIRST GREG	GREEN WRIGHT	CHURCH NEIL	PROSPECT BLOOM	ANTHONY MATT
				*6 00	*6 07	*6 13
			*6 15	*6 21	*6 29	*6 35
*6 21	*6 30	*6 35	*6 40			
			6 45	6 52	6 59	7 06
*7 11	*7 21	*7 27	*7 32	*7 39		
				*7 40	*7 47	*7 54
*E7 22	*E7 34	*E7 40	E7 45	8 07	8 14	8 21
*8 00	*8 10	*8 16	*8 21	*8 29 OFF		
XW8 25	W8 38	W8 44	W8 49	W8 56	9 03	9 10
9 19	9 26	9 32	9 40	9 47	9 54	10 01
10 04	10 14	10 20	10 25	10 32	10 39	10 46
10 44	10 54	11 00	11 05	11 12	11 19	11 26
11 39	11 39	11 45	11 50	11 57	12 04	12 11
12 00	12 19	12 25	12 30	12 37	12 44	12 51
1 01	1 11	1 17	1 22	1 29	1 36	1 43
1 34	1 44	1 50	1 55	2 02	2 09	2 16
				W2 25	*3 36	*3 43
3 26	3 36	3 42	3 47	3 54	4 01	4 08
J3 57	J3 17	J3 23	J3 28	J3 35	3 47	3 54
3 00	4 08	4 13	4 20	4 27	4 34	4 41
*4 26	*4 36	*4 42	*4 47	*4 54	*5 01	*5 08
4 47	4 57	5 04	5 10	5 18	5 26	5 33
5 33	5 43	5 49	5 53	6 00	6 07	6 14
*5 50	*6 07	*6 13	*6 18	*6 25	*6 32	*6 38
6 17	6 28	6 33	6 39 OFF			

3 — SOUTHBOUND

RES PARK	CAMP QUEEN	RES PARK	ANTHONY MATT	PROSPECT BLOOM	CHURCH NEIL	GREEN SIXTH	FIRST GREG	LYNDHURST WIND
						*6 09	*6 15	*6 21
	*6 17		*6 21	*6 27	*6 33	*6 40 OFF		
					*6 53	*7 00	*7 05	*7 11
*6 39	*6 45		*6 50	*6 56	*7 03	*7 10	*7 15	*7 22
7 10	7 18		7 23	7 31	7 39			
					7 40	7 48	*7 53	*8 00
						8 15	8 18	8 25
			*7 58	*8 06	*8 14	*8 21	*8 26 OFF	
*7 58	*8 06		*8 11	*8 18	*8 25	*8 32 OFF		
D8 25	D8 35		D8 40	D8 49	9 02	9 07	9 12	9 19
			*C8 50					
9 17	9 25		9 30	9 37	9 45	9 52	9 57	10 04
	10 05		10 10	10 17	10 25	10 32	10 37	10 44
	10 50		10 55	11 02	11 10	11 17	11 22	11 29
	11 30		11 35	11 42	11 50	11 57	12 02	12 09
12 18	12 23	12 23	12 27	12 34	12 42	12 49	12 54	1 01
12 58			1 02	1 07	1 15	1 22	1 27	1 34
	1 47		1 52	1 59	2 07	2 14	2 19	2 26
	2 39		2 44	2 51	2 59	3 06	3 11	3 18
				*3 10	*3 20			
	P3 13		P3 17	P3 24	K3 37	K3 44	K3 49	3 56
	*3 47		*3 52	*3 59	*4 07	*4 14	*4 19	*4 26
	4 08	4 08	4 13	4 20	4 28	4 35	4 40	4 47
	4 48	4 53	4 57	5 04	5 12	5 20	5 25	5 33
	*5 12	*5 20	*5 24	*5 31	*5 38	*5 46	*5 51	*5 58
	5 37		5 42	5 49	5 56	6 03	6 10	6 17
	6 18	6 26	6 30	6 37	6 44	6 53 OFF		
	*6 43		*6 47	*6 54	*7 01	*7 08 OFF		

* These trips do not operate on Saturday.

E On school days only this trip serves Edison Junior High. Leaves regular route at Neil and Green via Green to Prairie to Healey to Green, resuming regular route at Healey and Green.

R On school day mornings only this trip leaves regular route at Prospect and Windsor via Windsor to Galen to Devonshire, resuming regular route at Devonshire and Prospect. On school day afternoons this route is reversed.

W On school days only this trip serves Central High School. Leaves regular route at Church and Randolph via Church to Lynn, resuming regular route at Lynn and Vine.

D On school days only this trip serves Central High School. Leaves regular route at Vine and Lynn to University to Randolph to Hill, resuming regular route at Neil and Hill.

C On school days only this trip serves Central High School. Leaves Paula and Mattis via Paula to McKinley to Bradley to Prospect to University to Central.

J On school days only this trip serves Central High School. Leaves regular route at Church and Randolph via Church to Lynn to University to Elm to Vine, resuming regular route at Vine and Elm.

P On school days only this trip serves Central High School. Leaves regular route at Vine and Lynn via Lynn to University to Randolph to Hill, resuming regular route at Randolph and Hill.

NOTE Lavender bus does not pull into K Mart on northbound trips or southbound trips before 9:00 a.m.

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Figure 4. continued

4 — 4

WESTBOUND

MRKT PLACE	CHUR NEIL	GREEN SIXTH	STATE JOHN	JOHN MATT
6 25	6 33 OFF			
		*6 45	*6 53	*6 59
7 00	7 07 OFF			
7 29	7 39			
	7 40	7 47	7 56	8 03
7 53	8 03 OFF			
8 12	8 20	8 27	8 36	8 42
8 42	8 50	8 57	9 06	9 12
9 12	9 20	9 27	9 36	9 42
9 42	9 50	9 57	10 06	10 12
10 12	10 20	10 27	10 36	10 42
10 42	10 50	10 57	11 06	11 12
11 12	11 20	11 27	11 36	11 42
11 42	11 50	11 57	12 06	12 12
12:12	12:20	12:27	12:36	12:42
12:42	12:50	12:57	1:06	1:12
1:12	1:20	1:27	1:36	1:42
1:42	1:50	1:57	2:06	2:12
2:12	2:20	2:27	2:36	2:42
2:42	2:50	2:57	3:06	3:12
3:12	3:20	3:27	3:36	3:42
3:34	3:42	3:48	3:58	4:05
4:11	4:19	4:29	4:38	4:45
4:43	4:52	5:00	5:10	5:17
5:00	5:10			
	5:12	5:20	5:30	5:37
5:38	5:44	5:51	6:00	6:06
6:15	6:24	6:31	6:40	6:46
6:54	7:03	7:10 OFF		

EASTBOUND

CTRY FAIR	JOHN MATT	STATE JOHN	GREEN WRIGHT	CHUR NEIL	MRKT PLACE
*6 18	*6 25	*6 31	*6 40		
			*6 45	*6 52 OFF	
				6 53	7 00
*6 47	*6 55	*7 02	7 12	7 19	7 27
*7 08	*7 17	*7 24	*7 35	*7 42 OFF	
				7 43	7 52
*7 06					
7 19	7 28	7 37	7 48	7 55	8 04
7 53	8 01	8 08	8 18	8 25	8 34
8 10					
8 20	8 29	8 37	8 48	8 55	9 04
8 51	8 59	9 06	9 16	9 23	9 32
9 21	9 29	9 36	9 46	9 53	10 02
9 51	9 59	10 06	10 16	10 23	10 32
10 21	10 29	10 36	10 46	10 53	11 02
10 51	10 59	11 06	11 16	11 23	11 32
11 21	11 29	11 36	11 46	11 53	12:02
11 51	11 59	12:06	12:16	12:23	12:32
12:21	12:29	12:36	12:46	12:53	1:02
12:51	12:59	1:06	1:16	1:23	1:32
1:21	1:29	1:36	1:46	1:53	2:02
1:51	1:59	2:06	2:16	2:23	2:32
2:21	2:29	2:36	2:46	2:53	3:02
2:51	2:59	3:06	3:16	3:23	3:32
3:21	3:29	3:36	3:46	3:53	4:02
3:51	3:59	4:06	4:16	4:23	4:32
4:14	4:23	4:30	4:40	4:49	4:58
4:54	5:06	5:10	5:20	5:27	5:36
5:26					
5:51	5:59	6:06	6:16	6:23	6:32
6:41	6:49	6:56	7:06	7:13	7:22
*6:51	*6:59	*7:06	*7:16 OFF		
6:14	6:22	6:29	6:38	6:45	6:54
*6:54	*7:02	*7:09	*7:17 OFF		

* These trips do not operate on Saturday.

5 — 5

WESTBOUND

MAIN LIER	WASH NCAR	WASH KINCH	FLA PHILO	LINC SQ	GREEN WRGHT	CHUR NEIL	CTRY FAIR
					5 51	5 57	6 05
					*6 20	*6 26	*6 34
							x6 54
6 10	6 15	6 19	6 26	6 33	6 40		
					6 45	6 54	7 04
6 57	7 03	7 07	7 15	7 23	7 30	7 38	7 47
7 11	7 17	7 21	7 30	7 39			
				7 40	7 48	7 57	8 07
7 36	7 43	7 48	7 57	8 06	8 14	8 23	8 33
8 06	8 13	8 18	8 27	8 36	8 44	8 53	9 03
8 42	8 49	8 54	9 02	9 10	9 17	9 26	9 35
9 06	9 13	9 18	9 27	9 36	9 44	9 53	10 03
9 36	9 43	9 48	9 57	10 06	10 14	10 23	10 33
10 07	10 14	10 19	10 28	10 36	10 44	10 53	11 03
10 36	10 43	10 48	10 57	11 06	11 14	11 23	11 33
11 06	11 13	11 18	11 27	11 36	11 44	11 53	12:03
11 36	11 43	11 48	11 57	12:06	12:14	12:23	12:33
12:06	12:13	12:18	12:27	12:36	12:44	12:53	1:03
12:36	12:40	12:48	12:57	1:06	1:14	1:23	1:33
1:06	1:13	1:18	1:27	1:36	1:44	1:53	2:03
1:36	1:40	1:48	1:57	2:06	2:14	2:23	2:33
2:06	2:13	2:18	2:27	2:36	2:44	2:53	3:03
2:36	2:40	2:48	2:57	3:06	3:14	3:23	3:33
3:06	3:13	3:18	3:27	3:36	3:40	3:50	4:00
				4:02	4:10	4:20	4:30
3:48	3:56	4:01	4:10	4:22	4:30	4:39	4:49
4:14	4:21	4:26	4:36	4:44			
				4:52	5:00	5:10	5:20
4:44	4:51	4:56	5:04	5:12	5:20	5:30	5:40
5:23	5:29	5:33	5:41	5:49			
				5:53	6:00	6:07	6:16
6:07	6:13	6:17	6:25	6:32	*6:39	*6:46	*6:54
*6:40	*6:46	*6:49	*6:56	*7:03	*7:09	*7:16	*7:24

EASTBOUND

MALPK LWNDL	JOHN GOLD	CTRY FAIR	PROSP SPFLD	CHUR NEIL	GREEN WRGHT	LINC SQ	FLA PHILO
						*6 00	*6 11
						*6 30	*6 37
6 11	6 16	6 23	6 28	6 33	6 40		
					6 45	6 51	
						7 02	7 10
*6 41	*6 44	*6 51	*6 56	*7 02	*7 10 OFF		
x7 01	x7 07	x7 15	x7 21		x7 30	x7 39 OFF	
7 11	7 17	7 25	7 31	7 31			
				7 40	7 49	7 58	8 08
7 54	8 00	8 08	8 12	8 19	8 28	8 36	8 42
8 15	8 21	8 29	8 35	8 42	8 51	9 00	9 07
8 41	8 47	8 55	9 01	9 08	9 17	9 26	9 34
9 11	9 17	9 25	9 31	9 38	9 47	9 56	10 04
9 42	9 47	9 55	10 01	10 08	10 17	10 26	10 34
10 11	10 17	10 25	10 31	10 38	10 47	10 56	11 04
10 41	10 47	10 55	11 01	11 08	11 17	11 26	11 34
11 11	11 17	11 25	11 31	11 38	11 47	11 56	12:04
11 41	11 47	11 55	12:01	12:08	12:17	12:26	12:34
12:11	12:17	12:25	12:31	12:38	12:47	12:56	1:04
12:41	12:47	12:55	1:01	1:08	1:17	1:26	1:34
1:11	1:17	1:25	1:31	1:38	1:47	1:56	
						2:01	2:09
1:41	1:47	1:55	2:01	2:08	2:17	2:26	2:34
2:11	2:17	2:25	2:31	2:38	2:47	2:56	3:04
2:41	2:47	2:55					
		3:00	3:06	3:14	3:23	3:32	3:40
3:11	3:17	3:25	3:30	3:37	3:46	3:54	4:02
3:41	3:47	3:55	4:01	4:08	4:17	4:26	4:34
4:08	4:14	4:22	4:28	4:36	4:44	4:53	5:01
				*4:51	*5:00	*5:10	*5:18
4:38	4:46	4:57	5:03	5:11	5:20	5:29	5:37
4:57	5:03	5:11	5:17	5:24	5:33	5:42	*5:50
5:28	5:33	5:41	5:48	5:52	6:00	6:07	6:15
5:47	5:52	6:00	6:06	6:11	6:19	6:26	*634
6:23	6:28	6:35					
*7:00	*7:04	*7:10					
7:30	7:34	7:40					

* These trips do not operate on Saturday

n This trip does not serve Downtown Champaign. Leaves Regular Route at Springfield and Randolph Via Springfield to Neil Resuming Regular Route at Neil and Springfield

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Figure 4. continued

6 — WESTBOUND

FLA PHILO	WASH KINCH	WASH MCARTH	MAIN LIER	LINC SQ	GREEN WRGHT	CHUR NEIL
					6 07	6 13
					6 40	
6 11	6 18	6 22	6 27	6 32	6 45	6 52
					6 45	6 52
*6 37	*6 44	*6 48	*6 53	6 58	7 06	7 13
7 10	7 18	7 24	7 32	7 39		
				7 40	7 49	7 56
8 06	8 14	8 19	8 26	8 31	8 40	8 48
8 42	8 50	8 55	9 02	9 07	9 15	9 24
9 07	9 15	9 20	9 27	9 32	9 40	9 49
9 34	9 43	9 48	9 55	10 01	10 10	10 19
10 04	10 13	10 18	10 25	10 31	10 40	10 49
10 34	10 43	10 48	10 55	11 01	11 10	11 19
11 04	11 13	11 18	11 25	11 31	11 40	11 49
11 34	11 43	11 48	11 55	12 01	12 10	12 19
12 04	12 13	12 18	12 25	12 31	12 40	12 49
12 34	12 43	12 48	12 55	1 01	1 10	1 19
1 04	1 13	1 18	1 25	1 31	1 40	1 49
1 34	1 43	1 48	1 55	2 01	2 10	2 19
2 04	2 13	2 23	2 30	2 36		
				2 42	2 51	3 00
2 34	2 43	2 48	3 04	3 01	3 10	3 19
3 04	3 13	3 19	3 25	3 34	3 43	3 52
3 43	3 51	3 58	4 05	4 08	4 18	4 27
4 02	4 11	4 18	4 25	4 30	4 37	4 46
4 34	4 43	4 48	4 55	5 01	5 10	5 20
5 01	5 10	5 15	5 22	5 30-OFF		
*5 18	*5 26	*5 30	*5 36	*5 41		
				5 45	5 53	6 00
5 37	5 45	5 49	5 55	6 00-OFF		
*5 50	*5 58	*6 04	*6 11	*6 17	*6 25	*6 32
6 18	6 23	6 27	6 33	6 39-OFF		
*6 34	*6 42	*6 46	*6 51	*6 56-OFF		

6 — EASTBOUND

CTRY FAIR	UNIV PROSP	CHUR NEIL	GREEN WRGHT	LINC SQ	MAIN LIER
6 23	6 29	6 33	6 40		
			6 45	6 53	6 57
7 04	7 10	7 15	7 23	7 31	7 36
7 26	7 32	7 39			
		7 40	7 49	7 58	8 03
8 10	8 16	8 22	8 30	8 38	8 42
9 01	9 07	9 13	9 22	9 31	9 35
9 35	9 40	9 46	9 55	10 03	10 07
10 01	10 07	10 13	10 22	10 31	10 35
10 31	10 37	10 43	10 52	11 01	11 06
11 01	11 07	11 13	11 22	11 31	11 36
11 31	11 37	11 43	11 52	12 01	12 06
12 01	12 07	12 13	12 22	12 31	12 36
12 31	12 37	12 43	12 52	1 01	1 06
1 01	1 07	1 13	1 22	1 31	1 36
1 31	1 37	1 43	1 52	2 01	2 06
2 01	2 07	2 13	2 22	2 31	2 36
2 31	2 37	2 43	2 52	3 01	3 06
3 13	3 19	3 26	3 34	3 44	3 49
3 31					
3 39	3 46	3 51	4 00	4 09	4 14
4 07	4 14	4 22	4 31	4 40	4 44
4 39	4 46	4 51-OFF			
	4 56	5 01	5 10	5 19	5 23
4 58-OFF					
5 36	5 41	5 47	5 56	6 03	6 07
6 11	6 16	6 21	6 30	6 36	*6 40
*6 43	*6 48	*6 53	*7 00	7 07-OFF	

*These trips do not operate on Saturday

7 — WESTBOUND

150 DODSN	MTD GAR	LINC SU	GOWN FARVW	STH BRAD	CHUR NEIL	CHUR PROS	PARK LAND
*6 08	6 11	6 18	6 22	6 29	6 31		
					6 39	6 27	6 48
	*6 30	*6 37	*6 41	*6 48	*6 52-OFF		
*6 43	*6 48	*6 53	*7 00	*7 04	*7 10	*7 13	*7 23
7 12	7 17	7 23	7 29	7 33	7 39		
					*7 46	*7 43	*7 54
V 7 28	V 7 33	V 7 38					
		V 7 40	V 7 47	V 7 51	V 7 57	8 04	8 12
8 05	8 10	8 15	8 22	8 29	8 32	*8 36	*C8 46
*8 33	*8 38	*8 43	*8 50	*8 54	*9 00	*9 03	*9 11
9 09	9 14	9 19	9 26	9 30	9 36	*9 39	*9 50
*9 39	*9 44	*9 49	*9 56	*10 00	*10 06	*10 09	*10 20
10 09	10 14	10 19	10 26	10 30	10 36	*10 39	*10 50
*10 39	*10 44	*10 49	*10 56	*11 00	*11 06	*11 09	*11 20
11 09	11 14	11 19	11 26	11 30	11 36	*11 39	*11 50
*11 39	*11 44	*11 49	*11 56	*12 00	*12 06	*12 09	*12 20
12 09	12 14	12 19	12 26	12 30	12 36	*12 39	*12 50
*12 39	*12 44	*12 49	*12 56	*1 00	*1 06	*1 09	*1 20
1 09	1 14	1 19	1 26	1 30	1 36	*1 39	*1 50
*1 39	*1 44	*1 49	*1 56	*2 00	*2 06	*2 09	*2 20
2 09	2 14	2 19	2 26	2 30	2 36	*2 39	*2 50
*2 39	*2 44	*2 49	*2 56	*3 00	*3 06	*3 09	*3 20
3 09	3 14	3 19	3 26	3 30	3 36	*3 39	*3 50
*3 53	*3 57	*4 02	*4 07	*4 11	*4 17	*4 20	*4 31
4 03	4 08	4 13	4 20	4 24	4 30	4 33	U4 44

150 DODSN	MTD GAR	LINC SU	GOWN FARVW	STH BRAD	CHUR NEIL	CHUR PROS	PARK LAND
*4 38	*4 44	*4 49	*4 56	*5 00	*5 06-OFF		
5 15	5 23	5 28	5 35	5 39	5 45	*5 48	*5 58
*5 37	*5 43-OFF						
*5 55	*6 00	*6 06	*6 11	*6 15	6 20	*6 23	*6 34

7 — EASTBOUND

PARK LAND	UNIV PROS	CHUR NEIL	STH BRAD	GOWN FARVW	LINC SQ	MTD GAR	150 DODSN
						*6 02	*6 08
						*6 38	*6 43
		*6 36	*6 41	*6 45	*6 52	*6 58	
						7 08	7 12
6 49	6 59	7 04	7 10	7 14	7 21	7 24	7 39
*7 23	*7 34	*7 39					
		7 40	7 46	7 50	7 57	8 01	8 15
*7 54	*8 05	*8 10	*8 15	*8 19	*8 26	*8 29	*8 37
8 29	8 39	8 44	8 50	8 54	9 01	9 05	9 09
*C9 49	*9 59	*9 07	*9 13	*9 17	*9 24	*9 28	
						*9 35	*9 23
*9 29	*9 39	9 44	9 50	9 54	10 01	10 05	10 09
*9 50	*10 00	*10 14	*10 20	*10 24	*10 31	*10 35	*10 39
*10 29	*10 39	10 44	10 50	10 54	11 01	11 06	11 09
*10 50	*11 00	*11 14	*11 20	*11 24	*11 31	*11 35	*11 39
*11 29	*11 39	11 44	11 50	11 54	12 01	12 06	12 09
*11 50	*12 00	*12 14	*12 20	*12 24	*12 31	*12 36	*12 39
*12 29	*12 39	12 44	12 50	12 54	1 01	1 06	1 09
*12 50	*1 00	*1 14	*1 20	*1 24	*1 31	*1 36	*1 39
*1 29	*1 39	1 44	1 50	1 54	2 01	2 06	2 09
*1 50	*2 00	*2 14	*2 20	*2 24	*2 31	*2 36	*2 39
*2 29	*2 39	2 44	2 50	2 54	3 01	3 06	3 09
*3 09	*3 19	*3 25					
		*3 27	*3 33	*3 37	*3 44	*3 49	*3 52
*3 39	*3 51	3 56	4 04	4 08	4 15	4 20	4 23
*3 59	*4 09	*4 16	*4 20	*4 24	*4 31	*4 36	*4 39
*4 33	*4 45	4 51	4 59	5 03	5 10	5 14	5 19
		*5 10	*5 17	*5 21	*5 29	*5 33	*5 37
U4 44							
5 10	5 21	5 27					
		5 30	5 36	5 40	5 47	5 51	*5 55
*5 09	*5 19	5 15	5 21	5 25	5 32-OFF		
5 36							

* These trips do not operate on Saturday.

V On school days only this trip serves Holy Cross School. Leaves regular route at State and Church via State to White to Elm to Church, resuming regular route at Church and Elm.

C On school days only this trip serves Central High School. Leaves regular route at Parkland via May to Paula to McKinley to Bradley to Prospect and resumes regular route at University and Prospect.

U This trip operates to Marks and University via regular Gray Route then continues eastbound on the Orange Line.

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Figure 4. continued

9A 9A

PARKLAND TO CAMPUS TO SOUTHWOOD TO PARKLAND

PARK LAND	BRAD MCKIN	CHUR NEIL	GREEN SIXTH	4TH FLA	KIRBY CORON	GALEN WNDSR	WIND WINCH	CTRY FAIR	PARK LAND
								*6 18	*6 21
								*6 50	*6 56
*6 21	*6 26	*6 33	*6 40						
			6 45	6 50	6 54	7 01	7 04	7 16	7 22
			*7 03	*7 08	*7 12	*7 19	*7 22	*7 34	*7 40
*6 54	*7 01	*7 08	*7 15	*7 20	*7 24	*7 31	*7 35	*7 48	*7 55
7 23	7 30	7 39							
		7 40	7 48	7 53	7 57	8 04	8 07	8 19	8 25 OFF
*7 40	*7 48	*7 54	*8 01	*8 06	*8 10	*8 17	*8 20	*8 32	*8 38
*7 55	F8 01	*8 14	*8 21 OFF						
8 12	8 18	8 26	8 33	8 38	8 42	8 49	8 54	9 07	9 13
*8 38	*8 46	*8 57	*9 04	*9 09	*9 13	*9 20	9 23	*9 35	*9 41
9 13	9 19	9 27	9 34	9 39	9 43	9 50	9 53	10 06	10 11
*9 43	*9 49	*9 57	*10 04	*10 09	*10 13	*10 20	*10 23	*10 35	*10 41
10 13	10 19	10 27	10 34	10 39	10 43	10 50	10 53	11 06	11 11
*10 43	*10 49	*10 57	*11 04	*11 08	*11 13	*11 20	*11 23	*11 35	*11 41
11 13	11 19	11 27	11 34	11 39	11 43	11 50	11 53	12 06	12 11
*11 43	*11 49	11 57	*12 04	*12 09	*12 13	*12 20	*12 23	*12 36	*12 41
12 13	12 19	12 27	12 34	12 39	12 43	12 50	12 53	1 06	1 11
*12 43	*12 49	12 57	*1 04	*1 09	*1 13	*1 20	*1 23	*1 36	*1 41
1 13	1 19	1 27	1 34	1 39	1 43	1 50	1 53	2 06	2 11
								*2 37	*2 43
*1 55	*2 01	*2 09	M2 16	*M2 21	*M2 25	*2 40	*2 43	*2 58	*3 01 OFF
2 13	2 19	2 27	2 34	2 39	2 43	2 50	2 53	3 06	3 11
*2 43	*2 49	*2 57	*3 04	*3 09	*3 13	*3 20	*3 23	*3 36	*3 41
3 16	3 22	3 30	3 37	3 42	3 46	3 53	3 56	4 08	4 14
*3 48	*3 54	*4 02	*4 10	*4 15	*4 19	*4 26	*4 29	*4 41	*4 47
4 19	4 24	4 35	4 43	4 48	4 52	4 59	5 02	5 14	5 20
		*4 52	*5 00	*5 06	*5 11	*5 18	*5 22	*5 35	*5 42
*4 56	*5 02	*5 12	*5 20	*5 26	*5 31	*5 38	*5 42	*5 56	*6 02
5 20	5 26	5 34	5 41	5 46	5 50	5 57	6 00	6 12 OFF	
*5 45	*5 51	*5 58	*6 06	*6 11	*6 15	*A6 22	*A6 25	*A6 36	*A6 42
*6 10	*6 16	*6 24	*6 31	*6 36	*6 40	*A6 47	*A6 50	*A7 02	*A7 08

* These trips do not operate on Saturday.

F On school days only this trip serves Franklin Jr. High. Leaves regular route at Bradley and McKinley via Bradley to Harris, resuming regular route at Vine and Harris.

M On school days only this trip serves St. Matthew School. Leaves regular route at Broadmoor and Galen via Broadmoor to Lincoln Place to Foothill to Lincolnshire to St. Matthew to Lincolnshire to Foothill to Lincoln Place to Broadmoor, resuming regular route at Broadmoor and Galen.

9B 9B

PARKLAND TO SOUTHWOOD TO CAMPUS TO PARKLAND

PARK LAND	CTRY FAIR	WIND WINCH	WIND GALEN	KIRBY CORON	4TH FLA	GREEN WRGHT	CHRCH NEIL	BRAD MCKIN	PARK LAND
							*6 36	*6 44	*6 50
	*6 11	*6 21	*6 24	*6 31	*6 35	*6 40			
						6 45	6 52	7 00	7 06
						*7 16	*7 23	*7 31	*7 37
*6 55	*7 01	*7 13	*7 16	*7 23	*7 27	*7 32	*7 38		
							*7 40	*7 48	*7 54 OFF
7 08	7 14	7 26	7 29	7 37	7 42	7 48	7 55	8 03	8 09
*7 37	M7 43	M7 55	M7 58	*8 10	*8 14	*8 19	*8 26	*8 34	*8 40
8 09	8 15	8 26	W8 29	W8 35	W8 39	W8 44	W8 51	8 59	9 05
*8 40	*8 45	*8 56	*8 59	*9 05	*9 09	*9 14	*9 21	*9 29	*9 35
9 07	9 13	9 25	9 28	9 35	9 39	9 44	9 51	9 59	10 05
*9 37	*9 43	*9 55	*9 58	*10 05	*10 09	*10 14	*10 21	*10 29	*10 35
10 07	10 13	10 25	10 28	10 35	10 39	10 44	10 51	10 59	11 05
*10 37	*10 43	*10 55	*10 58	*11 05	*11 09	*11 14	*11 21	*11 29	*11 35
11 07	11 13	11 25	11 28	11 35	11 39	11 44	11 51	11 59	12 06
*11 37	*11 43	*11 55	*11 58	*12 06	*12 09	*12 14	*12 21	*12 29	*12 36
12 07	12 13	12 25	12 28	12 36	12 39	12 44	12 51	12 59	1 06
*12 37	*12 43	*12 55	*12 58	*1 05	*1 08	*1 14	*1 21	*1 29	*1 35
1 07	1 13	1 25	1 28	1 35	1 39	1 44	1 51	1 59	2 06
*1 37	*1 43	*1 55	*1 58	*2 06	*2 09	*2 14	*2 21	*2 29	*2 35
2 07	2 13	2 25	2 28	2 35	H2 38	H2 44	H2 51	3 10	3 16
*2 37	*2 43	*2 58	*3 02	*3 09	*3 13	*3 18	*3 25	*3 33	*3 39
3 19	3 26	3 38	3 41	3 48	3 52	3 57	4 04	4 12	4 18
*3 39	*3 46	*3 57	*4 00	*4 07	*4 11	*4 16	*4 24	*4 32	*4 38
4 19	4 26	4 38	4 41	4 48	4 52	4 57	5 05	5 13	5 19
*4 42	*4 49	*5 01	*5 04	*5 11	*5 15	*5 20	*5 28	*5 36	*5 42
5 20	5 27	5 39	5 42	5 49	5 53	5 58	6 05	6 13	6 19
*5 47	*5 53	*6 05	*6 08	* 6 15	* 6 19	* 6 26			
6 19	6 25	*6 37	*6 40	* 6 47	* 6 51	* 6 58			

These trips do not operate on Saturday.

M On school days only this trip serves St. Matthew School. Leaves regular route at Broadmoor and Galen via Broadmoor to Lincoln Place to Foothill to Lincolnshire to St. Matthew to Lincolnshire to Foothill to Lincoln Place to Broadmoor, resuming regular route at Broadmoor and Galen.

H On school days only this trip serves Franklin Junior High. Leaves regular route at Prospect and Vine via Prospect to Sherwood Terrace to Harris, resuming regular route at Vine and Harris.

W On school days only this trip serves Central High School. Leaves regular route at Church and Randolph via Church to Lynn, resuming regular route at Lynn and Vine.

Figure 5.

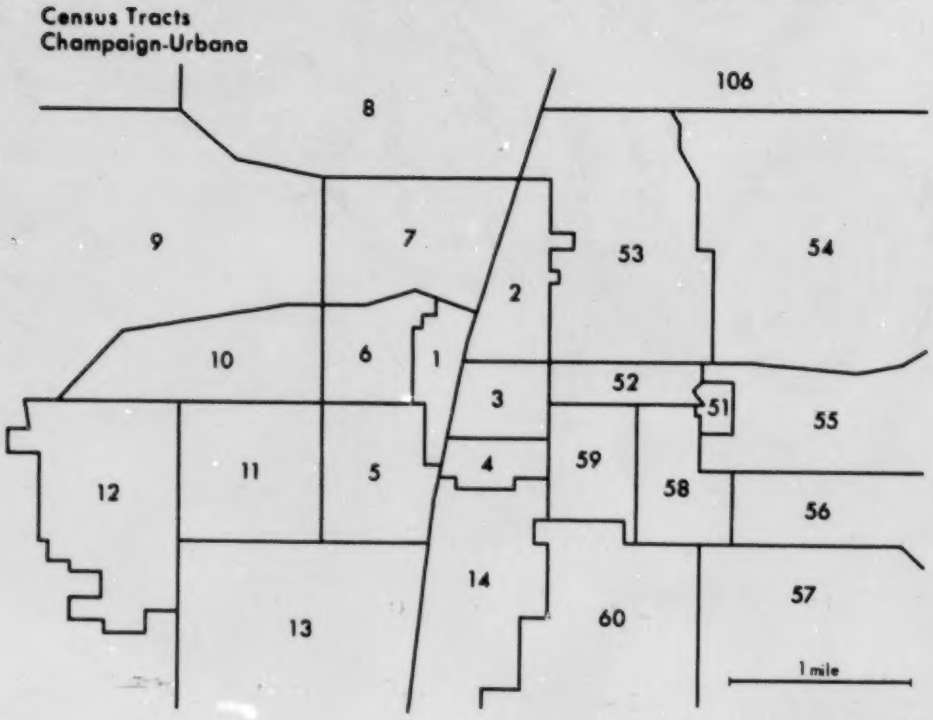
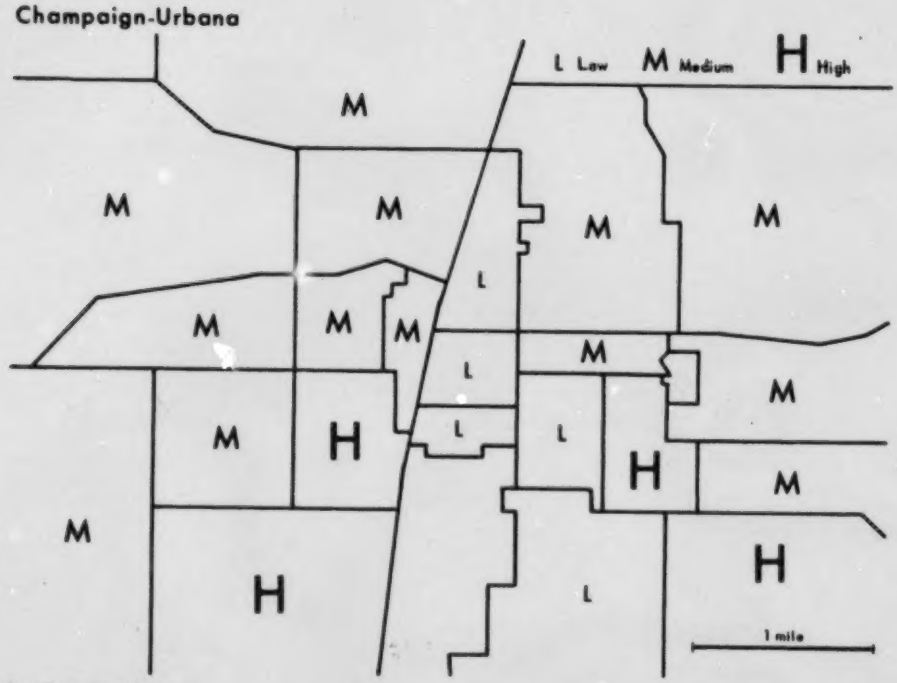
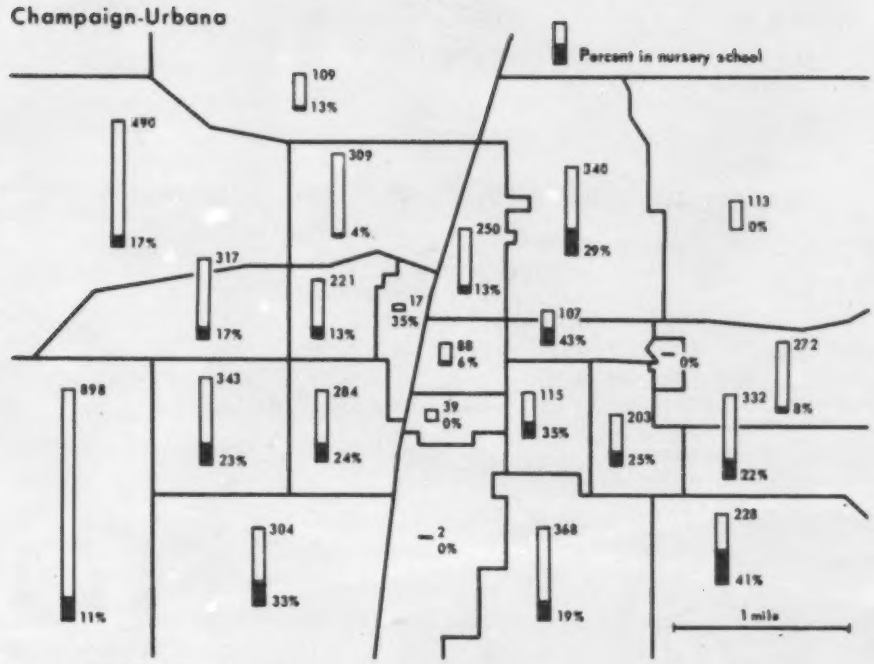


Figure 6.



By Census Tracts
MEDIAN INCOME

Figure 7.

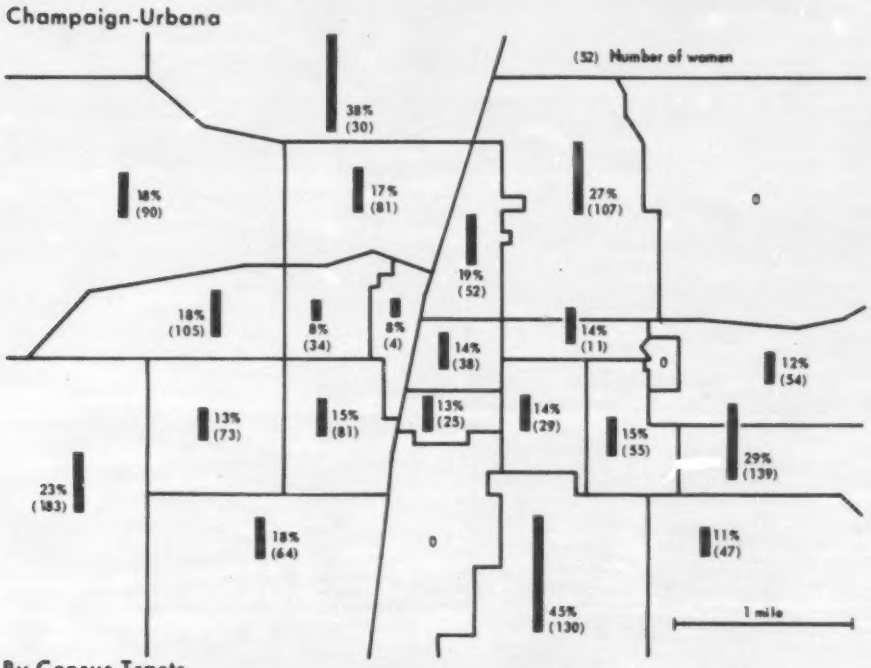


By Census Tracts

CHILDREN LESS THAN 5 YEARS OF AGE AND

PERCENT ENROLLED IN NURSERY SCHOOL

Figure 8.



By Census Tracts

PERCENTAGE OF MARRIED WOMEN IN LABOR FORCE

WITH CHILDREN LESS THAN 6 YEARS OF AGE

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Figure 9.

General Characteristics of the Population: 1970

[For minimum base for derived figures (percent, median, etc.) and meaning of symbols, see text]

Census Tracts	Champaign County					Champaign								
	Total	Champaign	Rantoul	Urbana	Balance	Tract 0001	Tract 0002	Tract 0003	Tract 0004	Tract 0005	Tract 0006	Tract 0007	Tract 0008	Tract 0009
RACE														
All persons	163 281	56 533	25 562	32 800	48 387	670	2 740	4 010	6 818	4 448	4 123	3 794	616	4 349
White	150 338	50 615	23 040	29 215	47 448	614	148	3 581	6 520	4 182	3 847	3 172	608	3 974
Negro	10 677	5 282	2 025	2 655	715	54	2 584	288	157	232	257	597	8	364
Percent Negro	6.5	9.3	7.9	8.1	1.5	8.1	94.3	7.2	2.3	5.2	6.2	15.7	1.3	8.4
AGE BY SEX														
Male, all ages	85 091	29 854	13 254	15 784	26 219	294	1 288	2 267	4 425	2 122	1 884	1 875	302	2 137
Under 5 years	6 678	1 894	1 252	1 042	2 490	4	122	44	24	144	125	172	47	248
3 and 4 years	2 545	730	482	367	966	–	50	13	5	48	42	64	24	93
5 to 9 years	7 126	2 091	1 436	960	2 639	3	147	26	8	168	88	162	40	246
5 years	1 318	369	286	201	462	1	16	4	2	25	14	18	9	47
6 years	1 447	436	292	180	539	–	40	3	–	40	22	37	10	46
7 years	7 005	2 139	1 296	942	2 628	6	161	24	12	145	119	166	33	247
8 years	1 352	417	230	190	515	1	31	3	4	31	28	33	6	51
9 years	12 908	5 406	3 157	2 299	2 046	22	148	234	1 605	200	158	157	18	181
10 to 14 years	1 275	407	168	206	494	–	32	7	1	39	23	29	5	40
11 years	1 263	389	179	199	496	–	27	4	2	34	31	32	3	47
12 years	1 183	410	147	216	410	4	29	5	20	24	26	32	5	27
13 years	3 970	1 997	907	743	323	11	32	64	656	45	33	32	4	97
14 years	5 217	2 203	1 756	935	323	7	28	154	926	58	45	32	1	30
15 to 19 years	16 534	6 660	3 504	4 020	2 350	64	83	1 241	2 263	325	455	226	21	204
15 years	4 803	2 082	1 284	1 111	326	8	20	279	1 019	55	81	38	1	18
16 years	4 037	1 779	769	1 056	433	18	17	389	624	74	91	49	1	49
17 years	12 411	3 973	2 023	2 556	3 859	51	110	395	373	333	305	274	81	356
18 years	8 010	2 473	1 495	1 242	2 800	26	122	77	49	179	133	170	39	271
19 years	6 348	2 257	652	1 082	2 357	31	172	55	31	246	160	226	17	183
20 to 24 years	2 434	910	178	436	910	19	62	38	18	104	107	102	3	62
20 years	1 940	683	97	397	763	23	49	24	14	86	67	80	–	59
21 years	2 344	899	110	470	865	28	79	63	19	132	106	92	3	40
25 to 34 years	1 353	469	54	318	512	17	33	46	9	60	61	48	–	21
35 to 44 years														
45 to 54 years														
55 to 59 years														
60 to 64 years														
65 to 74 years														
75 years and over														
Female, all ages	78 190	26 679	10 308	17 036	24 168	376	1 452	1 743	2 393	2 326	2 239	1 919	314	2 272
Under 5 years	6 280	1 777	1 159	1 037	2 307	13	128	44	15	140	96	137	62	242
3 and 4 years	2 387	700	459	376	852	6	42	15	2	49	29	47	27	105
5 to 9 years	6 908	2 009	1 397	909	2 593	7	126	19	10	147	95	146	52	269
5 years	1 324	394	268	163	499	1	30	8	–	35	16	29	14	80
6 years	1 337	384	276	179	498	–	17	3	2	19	18	32	12	55
7 years	6 776	2 066	1 232	944	2 534	9	162	21	10	151	91	160	25	241
8 years	1 241	381	207	180	473	1	34	5	4	24	24	26	4	44
9 years	9 429	3 257	902	3 223	2 047	39	151	187	603	184	215	169	15	181
10 to 14 years	1 155	367	181	161	446	3	32	5	–	24	24	26	6	44
11 years	1 224	414	182	207	421	3	35	7	2	34	20	40	3	45
12 years	1 196	391	134	231	440	2	33	10	17	29	31	24	2	41
13 years	2 792	912	185	1 321	374	12	29	53	172	49	64	36	1	30
14 years	3 062	1 173	220	1 303	366	19	22	112	412	48	76	43	3	21
15 to 19 years	12 336	4 711	1 272	3 785	2 568	56	128	854	1 362	315	403	243	34	220
15 years	3 198	1 310	255	1 217	416	12	30	229	579	55	73	37	3	22
16 years	2 928	1 223	251	946	508	12	32	309	403	63	90	56	4	31
17 years	11 209	3 463	1 916	2 088	3 742	25	147	165	183	284	250	221	86	348
18 years	7 634	2 507	1 197	1 255	2 675	23	161	43	41	193	155	181	27	279
19 years	6 691	2 469	657	1 241	2 324	25	179	68	44	289	211	261	11	309
20 to 24 years	2 629	1 039	172	531	887	24	67	43	29	121	144	115	1	98
20 years	2 256	903	108	500	745	35	65	39	31	127	121	84	–	54
21 years	3 316	1 386	164	768	998	65	89	124	40	207	250	133	–	61
25 to 34 years	2 726	1 091	132	755	748	55	49	136	25	168	208	69	1	80
35 to 44 years														
45 to 54 years														
55 to 59 years														
60 to 64 years														
65 to 74 years														
75 years and over														
TYPE OF FAMILY AND NUMBER OF OWN CHILDREN														
All families	36 649	13 634	5 485	6 558	13 052	116	636	477	330	1 199	1 001	1 056	159	1 190
With own children under 18 years	20 775	6 208	3 636	3 223	7 708	19	324	111	58	506	337	492	134	759
Number of children	45 805	13 604	8 432	6 592	17 177	38	872	194	80	1 047	721	1 012	278	1 640
Husband-wife families	33 343	10 330	4 986	5 798	12 219	88	409	402	300	1 094	846	911	153	1 006
With own children under 18 years	18 899	5 517	3 308	2 800	7 274	13	186	93	53	451	274	418	127	656
Number of children	41 587	12 050	7 626	5 644	16 267	25	504	157	74	933	582	844	267	1 425
Percent of total under 18 years	86.5	83.9	87.0	80.0	90.9	46.3	48.7	72.7	61.2	86.5	75.7	75.0	94.3	82.4
Families with other male head	589	285	52	138	194	4	22	23	10	18	22	22	1	12
With own children under 18 years	191	58	25	52	56	1	9	1	2	6	7	3	1	1
Number of children	355	109	49	98	99	2	16	1	2	8	12	4	2	2
Families with female head	2 717	1 099	357	622	639	24	195	52	20	87	133	123	6	121
With own children under 18 years	1 685	633	303	371	378	5	129	17	3	49	56	71	6	98
Number of children	3 863	1 445	757	850	811	11	352	36	4	106	127	164	9	224
Percent of total under 18 years	8.0	10.1	8.6	12.0	4.5	20.4	34.0	16.7	3.3	9.8	16.5	14.6	3.2	13.0
Persons under 18 years	48 069	14 354	8 763	7 054	17 898	54	1 034	216	121	1 079	769	1 126	283	1 727
SCHOOL ENROLLMENT														
Enrolled persons, 3 to 34 years old	64 917	25 336	7 501	16 384	15 696	173	851	2 400	5 310	1 456	1 226	966	326	1 687
Nursery school	1 261	460	123	424	254	6	16	5	–	56	21	11	14	50
Public	294	120	26	70	78	–	16	–	–	11	8	–	–	32
Kindergarten	2 516	676	578	365	897	–	12	5	6	72	11	32	17	101
Public	2 482	664	566	355	897	–	12	5	6	72	11	27	17	101
Elementary	22 637	6 767	4 618	2 816	8 436	28	537	60	46	480	319	499	174	817
Public	21 415	6 247	4 334	2 779	8 055	13	522	60	46	448	293	456	174	786
High school	9 701	2 959	1 496	1 517	3 729	10	197	28	11	203	201	200	78	312
Public	9 461	2 851	1 421	1 482	3 707	10	197	28	11	189	195	200	78	296
College	28 802	14 474	686	11 262	2 380	129	89	2 302	5 247	645	674	224	43	327
Percent enrolled in school by age														
16 and 17 years	94.8	92.5	93.7	97.9	95.6	–	88.5	...	...	78.5	97.5	95.1	...	91.3
18 and 19 years	68.0	83.4	16.2	89.3	47.4	40.7	73.8	71.9	87.7	84.8	73.4	51.5	–	74.8
20 and 21 years	59.1	71.8	7.3	79.9	35.1	82.0	26.3	84.0	80.5	48.7	51.8	20.0	25.9	54.8
22 to 24 years	42.2	54.4	9.1	62.4	23.7	38.3	10.2	69.0	81.2	63.7	44.7	24.6	7.3	34.2
25 to 34 years	22.2	28.2	5.7	44.2	11.0	81.1	4.2	70.0	70.8	21.5	27.2	12.7	20.7	14.6
Percent 16 to 21 years not high school graduates and not enrolled in school	5.6	4.2	7.4	4.2	9.9	8.8	17.3	1.1	5.2	3.7	7.1	14.6	8.9	6.9

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Figure 9. continued

Census Tracts	Champaign – Con.					Urbana					Urbana – Con.				
	Tract 0010	Tract 0011	Tract 0012	Tract 0013	Tract 0014	Tract 0051	Tract 0052	Tract 0053	Tract 0054	Tract 0055	Tract 0056	Tract 0057	Tract 0058	Tract 0059	Tract 0060
RACE															
All persons	4 633	5 193	7 800	3 896	3 442	166	3 377	3 578	1 375	3 804	3 303	3 490	4 346	6 383	3 989
White	4 521	5 134	7 403	3 792	3 119	153	2 146	1 842	1 234	3 733	3 243	3 367	4 221	5 704	3 572
Negro	93	19	325	58	246	10	161	1 693	139	34	37	22	50	255	254
Percent Negro	2.0	0.4	4.2	1.5	7.1	6.0	6.8	47.3	10.1	0.9	1.1	0.6	1.2	4.0	6.4
AGE BY SEX															
Male, all ages	2 257	2 545	3 912	2 029	2 537	72	1 304	1 714	671	1 769	1 595	1 733	3 162	2 676	2 068
Under 5 years	176	170	465	153	–	1	54	182	64	127	162	109	110	59	174
3 and 4 years	64	66	198	63	–	–	16	63	30	45	53	47	37	18	58
5 to 9 years	207	233	567	206	–	–	28	145	73	125	156	196	129	26	82
5 years	41	39	108	45	–	–	5	22	13	24	37	36	33	7	24
6 years	29	46	118	45	–	–	7	28	12	23	22	40	18	6	14
10 to 14 years	215	283	531	197	–	–	33	139	73	133	163	217	132	15	17
14 years	37	57	90	45	–	–	3	35	10	26	31	45	37	1	2
15 to 19 years	215	251	317	149	1 751	9	94	146	83	143	133	155	216	622	698
15 years	47	62	90	32	–	–	7	33	19	31	31	42	36	5	2
16 years	44	56	73	35	1	–	7	37	16	27	27	39	36	4	2
17 years	54	65	65	29	25	3	15	25	19	22	27	33	40	17	15
18 years	34	36	52	22	939	2	20	27	20	33	30	28	41	248	294
19 years	36	32	37	31	786	4	41	24	9	30	18	13	63	348	385
20 to 24 years	197	172	268	396	745	24	590	259	49	292	158	136	492	1 360	660
20 years	35	34	41	48	405	9	99	46	4	30	21	18	106	489	309
21 years	36	39	62	120	210	1	197	65	19	57	34	25	130	349	179
25 to 34 years	294	301	758	311	28	13	290	263	96	254	305	195	347	427	366
35 to 44 years	239	309	593	265	1	5	59	146	66	177	182	276	190	76	65
45 to 54 years	268	380	267	221	–	7	56	155	70	155	172	261	178	24	4
55 to 59 years	110	147	63	55	–	5	21	55	34	75	58	72	97	18	1
60 to 64 years	116	107	29	33	–	4	35	50	22	84	57	60	74	10	1
65 to 74 years	138	137	27	34	1	1	26	81	29	109	34	48	119	23	–
75 years and over	82	55	27	9	1	3	18	73	12	95	15	8	78	16	–
Female, all ages	2 376	2 648	3 888	1 867	915	94	1 073	1 864	704	2 035	1 708	1 747	2 184	3 706	1 921
Under 5 years	141	173	433	151	2	–	53	158	49	145	170	119	93	56	194
3 and 4 years	65	72	170	71	–	–	26	60	20	57	69	41	36	11	56
5 to 9 years	163	205	560	210	–	–	32	131	78	131	158	163	121	29	67
5 years	36	27	106	42	–	–	5	17	14	24	36	27	19	7	14
6 years	29	40	122	35	–	–	9	22	15	27	27	35	19	5	20
10 to 14 years	214	285	499	196	2	2	34	158	78	118	150	217	128	26	33
14 years	37	62	84	31	1	1	7	27	18	23	21	41	26	7	7
15 to 19 years	208	223	319	150	613	7	78	148	63	139	143	148	154	1 558	785
15 years	50	48	77	28	–	2	15	28	10	19	28	33	23	1	2
16 years	37	54	88	46	–	2	4	40	22	32	37	38	25	1	6
17 years	36	54	66	33	13	–	3	23	14	28	30	33	33	39	28
18 years	36	40	41	22	327	1	22	15	9	24	27	23	22	761	417
19 years	49	27	47	21	273	2	34	42	8	36	21	21	51	756	332
20 to 24 years	214	154	266	201	261	15	409	238	78	281	189	129	390	1 568	488
20 years	47	23	42	31	127	2	74	51	17	59	32	18	82	704	178
21 years	40	28	34	42	72	5	130	48	6	54	34	18	104	431	116
25 to 34 years	280	325	796	327	26	8	163	250	84	245	293	214	276	239	316
35 to 44 years	261	317	553	268	5	6	42	164	72	180	221	294	197	50	29
45 to 54 years	315	413	240	203	1	11	66	172	92	192	189	258	214	39	8
55 to 59 years	134	163	56	53	1	2	49	76	33	99	62	82	103	25	–
60 to 64 years	140	126	28	50	3	6	32	71	28	111	51	50	109	42	–
65 to 74 years	169	168	44	36	–	25	71	128	37	166	49	38	214	39	1
75 years and over	137	96	94	22	1	12	44	171	12	228	33	35	185	35	–
TYPE OF FAMILY AND NUMBER OF OWN CHILDREN															
All families	1 388	1 458	1 829	950	6	21	437	863	364	987	946	947	1 017	410	546
With own children under 18 years	617	787	1 463	606	1	6	134	417	195	427	559	573	428	139	345
Number of children	1 316	1 657	3 436	1 302	2	7	264	1 011	438	869	1 112	1 222	875	223	571
Husband-wife families	1 169	1 374	1 701	873	5	17	393	684	289	855	847	898	895	381	537
With own children under 18 years	577	747	1 366	555	1	4	111	307	137	367	499	539	372	128	336
Number of children	1 246	1 590	3 200	1 203	2	5	206	695	298	745	991	1 164	782	207	551
Percent of total under 18 years	90.0	94.2	91.1	91.4	4.7	50.0	71.3	62.2	57.9	79.4	87.0	93.9	86.3	74.5	88.6
Families with other male head	24	32	24	10	1	–	15	27	8	30	18	14	16	7	3
With own children under 18 years	7	4	13	3	–	–	4	13	2	11	7	7	5	–	3
Number of children	8	5	38	9	–	–	9	26	6	17	13	13	6	–	8
Families with female head	95	72	104	67	–	4	47	152	67	102	81	35	106	22	6
With own children under 18 years	33	36	84	48	–	2	19	97	56	49	53	27	51	11	6
Number of children	62	62	198	90	–	2	49	290	134	107	108	45	87	16	12
Percent of total under 18 years	4.5	3.7	5.6	6.8	–	20.0	17.0	25.9	26.0	11.4	9.5	3.6	9.6	5.8	1.9
Persons under 18 years	1 384	1 688	3 514	1 316	43	10	289	1 118	515	938	1 139	1 239	906	278	622
SCHOOL ENROLLMENT															
Enrolled persons, 3 to 34 years old	1 432	1 746	3 198	1 693	3 950	21	1 135	1 335	369	1 105	1 862	1 434	1 683	3 219	3 021
Nursery school	53	67	83	78	–	–	38	67	–	22	66	79	51	30	71
Public	–	11	20	22	–	–	8	31	–	–	7	14	–	10	–
Kindergarten	72	60	214	74	–	–	6	27	16	47	79	74	61	18	37
Public	72	60	207	74	–	–	6	27	10	47	79	74	57	18	37
Elementary	638	797	1 739	633	–	–	51	509	193	434	445	633	360	82	109
Public	548	714	1 604	556	–	–	51	509	193	434	445	633	345	82	87
High school	375	475	570	299	–	–	40	231	106	267	225	298	259	68	23
Public	367	463	542	275	–	–	34	231	96	261	225	285	259	68	23
College	314	347	574	609	2 950	21	1 000	501	54	335	247	350	952	5 021	2 781
Percent enrolled in school by age															
16 and 17 years	94.2	99.9	82.7	89.5	99.9	–	87.5	95.4	91.0	99.9	99.9	99.9	75.2	94.6	99.9
18 and 19 years	55.4	86.8	54.2	81.2	90.3	–	86.0	77.0	82.1	37.1	66.7	71.8	81.7	93.2	94.3
20 and 21 years	41.0	55.3	43.8	73.0	74.2	18.8	68.7	55.0	21.1	42.8	33.1	68.3	62.2	94.5	87.8
22 to 24 years	33.8	31.0	23.5	65.9	87.8	–	76.5	39.6	7.6	46.9	24.2	63.3	58.4	81.6	64.9
25 to 34 years	18.8	18.9	23.7	24.6	29.5	18.9	51.3	42.7	12.4	23.9	18.1	31.9	50.9	73.1	58.3
Percent 16 to 21 years not high school graduates and not enrolled in school	7.2	0.8	6.2	0.8	0.6	24.4	1.9	6.5	12.9	13.8	4.6	–	8.9	3.2	2.4

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Figure 9. continued

Social Characteristics of the Population: 1970

[Data based on sample; see text. For minimum base for derived figures (percent, median, etc.) and meaning of symbols, see text]

Census Tracts	Champaign County					Champaign								
	Total	Champaign	Rantoul	Urbana	Balance	Tract 0001	Tract 0002	Tract 0003	Tract 0004	Tract 0005	Tract 0006	Tract 0007	Tract 0008	Tract 0009
MEANS OF TRANSPORTATION AND PLACE OF WORK														
All workers	**70 058**	**24 128**	**12 592**	**13 797**	**19 541**	**371**	**1 116**	**2 050**	**2 499**	**2 080**	**2 125**	**1 701**	**314**	**1 080**
Private auto: Driver	42 176	14 650	7 086	6 923	13 517	118	644	587	540	1 462	1 381	1 176	220	1 343
Passenger	8 742	3 078	1 327	1 642	2 695	63	146	185	70	285	349	323	53	290
Bus or streetcar	985	333	12	460	180	30	20	-	19	17	53	4	11	31
Subway, elevated train, or railroad	436	14	415	7	-	-	-	-	7	-	-	-	-	-
Walked to work	11 740	4 032	3 253	3 649	806	127	58	1 092	1 527	120	156	68	-	56
Worked at home	2 850	791	95	367	1 597	9	42	79	181	53	104	22	14	39
Other	3 129	1 230	404	749	746	24	206	107	155	142	82	108	16	42
Inside SMSA	63 876	21 200	12 051	12 619	18 006	339	900	1 716	1 867	1 947	1 852	1 545	299	1 662
Champaign city	22 954	12 812	494	3 460	6 188	255	587	737	1 028	1 046	1 159	1 042	157	1 224
Urbana city	19 624	6 354	348	8 268	4 654	70	215	847	790	681	511	362	67	244
Remainder of Champaign County	21 298	2 034	11 209	891	7 164	14	98	132	49	220	182	141	75	194
Outside SMSA	2 149	803	191	305	850	-	4	58	60	29	88	69	15	79
Place of work not reported	4 033	2 125	350	873	685	32	212	276	572	104	185	87		59

Census Tracts	Champaign – Con.					Urbana					Urbana – Con.				
	Tract 0010	Tract 0011	Tract 0012	Tract 0013	Tract 0014	Tract 0051	Tract 0052	Tract 0053	Tract 0054	Tract 0055	Tract 0056	Tract 0057	Tract 0058	Tract 0059	Tract 0060
MEANS OF TRANSPORTATION AND PLACE OF WORK															
All workers	**2 116**	**2 293**	**3 057**	**1 657**	**949**	**66**	**1 313**	**1 278**	**540**	**1 650**	**1 527**	**1 501**	**2 066**	**2 587**	**1 349**
Private auto: Driver	1 478	1 780	2 421	1 329	171	14	515	763	332	1 115	1 133	1 257	972	343	479
Passenger	417	282	395	181	39	6	157	235	107	343	236	146	232	81	99
Bus or streetcar	32	29	32	23	32	7	35	48	-	27	12	13	23	44	251
Subway, elevated train, or railroad	-	7	-	-	-	-	-	-	-	-	-	-	7	-	-
Walked to work	57	52	34	71	614	39	527	155	13	85	31	31	575	1 801	392
Worked at home	57	64	83	5	39	-	8	5	22	25	46	29	73	102	57
Other	75	79	92	48	54	-	71	72	66	55	69	25	184	136	71
Inside SMSA	1 982	2 122	2 876	1 530	563	58	1 242	1 229	529	1 520	1 423	1 455	1 839	2 164	1 160
Champaign city	1 253	1 275	1 731	894	424	27	440	421	157	389	504	282	511	393	336
Urbana city	504	627	849	473	114	23	700	684	285	937	816	1 045	1 292	1 687	799
Remainder of Champaign County	225	220	296	163	25	8	102	124	87	194	103	128	36	84	25
Outside SMSA	62	99	111	90	39	8	-	29	6	51	53	12	56	38	52
Place of work not reported	72	72	70	37	347	-	71	20	5	79	51	34	171	305	137

MODULE 5:
CONTEMPORARY FEMALE MIGRATION TO CITIES IN LATIN AMERICA

by Arlene C. Rengert and Janice J. Monk

What determines the spatial distribution population? What factors lie behind rapid and continuing urban growth even in the poorest of countries? There are many structural interpretations which have been suggested by geographers and other social scientists, among them relative unemployment and relative wage rates. There is also a strong behavioral component to population distribution and redistribution. That is, except for some instances of forced migration, it is individual men and women who make decisions to change (or not to change) their residences who collectively redistribute a population. The range of choices that each group faces is influenced by structural features of places, and by behavioral constraints such as sex-role specification and individual resources.

This reading should introduce you to the behavioral component of migration and should give you background in understanding the complexity of the migration decision in a different cultural and economic context. After reading it you should be prepared to discuss, specifically, reasons behind the migration of poor women to cities in Latin America. You should have some understanding of how the range of choices may differ for men and for women. And you should be able to suggest differences in the structure of society which result in contrasts between the migration process you are reading about and that of modern Northern America.

OBJECTIVES

1. To understand the behavioral component of an aggregate spatial process, in particular to gain behavioral insights into the rural-to-urban migration and population redistribution currently taking place in developing countries.
2. To interpret migration as a considered response to perceived differences in opportunities between one place and another.
3. To recognize ways in which the structural characteristics of society influence migration decisions.
4. To analyze differences between male and female migration patterns in Latin America from the perspective of several social science disciplines.
5. To realize how examination of aggregate data, such as sex ratios, can suggest possible underlying behavioral processes (which can be identified and explored through separate investigation).
6. To assess one detailed case study of a decision to move from a rural village to a squatter settlement.
7. To suggest difficulties faced and solutions attempted by Third World village-dwellers which may differ from those of migrants to cities of the United States at a comparable stage of its urbanization.

AN INTRODUCTION TO MIGRATION

Migration, then, is the spatial process you engaged in when you decided to change your place of residence. For most people there is considerable decision making associated with migration, and some geographers characterize this decision making as responding to the "pushes" and "pulls" of different places. In your case, the "pull" which led you to your destination may have been the opportunity for further education at your college. Or perhaps there was a "push" associated with your hometown—such as high unemployment, or your perception that social opportunities were lacking. Regardless of your migration motivations and whether they are based on accurate perceptions, your migration has resulted in a changed *population distribution* since your hometown has lost one person in your age, sex, ethnic, and economic bracket and the place where you are now living has gained one person in those categories. All of these changes follow from your decision to migrate.

Most people make decisions to migrate based on a reasoned quest for a better life—such as you did when you moved here for college. The reasoning which leads to the decision may not in fact bring fulfillment of expectations and may be based on incomplete or incorrect information. For example, at least one of you may have had a better chance for a steady job and a higher income if you had apprenticed yourself to a local plumber. In middle-class America people make migration decisions not only for education and higher wages, but for larger houses as the families grow, for continual promotions, for open spaces or the excitement of the urban landscape, and even for smaller living units and warmer climates with retirement.* These and other alternatives fit someone's reasoned "better life"—and, in fact, the average American moves thirteen times in a lifetime. Many of these moves are migrations, and the collective migrations that result from individual decisions produce the continual *redistribution* of the American population.

The same process occurs all over the world and we wish to turn attention now to the most prevalent population redistribution trend that is taking place in today's developing countries. This is *rural-to-urban migration.*

You may have read that large cities in developing countries are growing rapidly through migration despite the general lack of jobs there. Perhaps you have heard the term *over-urbanization,* or you may have seen pictures of people crowded into *barrios, barriadas,* or *squatter settlements* and heard them described as migrants from the countryside. You may know that in most cases the availability of jobs in most rural areas from which the people have moved is no better than in the city, and the education and health opportunities—as well as the quality of housing—are also less in many rural villages. These people who crowd the poverty areas of large cities also are making a reasoned quest for a better life. Perhaps in proverty circumstances a better term is *survival strategy.*

Whether from the standpoint of individual welfare or from the standpoint of a country's population redistribution, social scientists and policy makers have been studying this rural-to-urban migration for quite a while. One of the kinds of data they collect in an attempt to understand the migration process is the *sex composition* of the migrant population or of specific migrant streams.

*The situations identified as "pulls" could alternatively be expressed as "pushes", for example, people may migrate to get away from colder climates or to replace outgrown living quarters.

SEX AND MIGRATION

Sex composition is traditionally expressed as a *sex ratio* of males per hundred females. From our own experiences we might expect sex ratios of about 100—that is, equal migration of males and females— or that if one sex predominates in a migrant group it would be the male. In much of the world this is true of urban migrants. However, in most Latin American cities females predominate in urban migration. This is in contrast to cities of Asia and Africa where in most cases it is males who dominate the in-migration.

Researchers are only recently beginning to investigate the question of why there are these sex differences in migration, of why females predominate in Latin American migration. Nevertheless the greater rural-to-urban migration of women in Latin America has been known for some time. In 1965, for example, the demographer Elizaga computed the sex ratios of migrants into urban areas of six countries in Central and South America and found that in all cases the sex ratio was less than 90 and in one country it was as low as 54. Census data for Mexico in 1960 show that of the sixteen cities which had more than 100,000 inhabitants (in all but one of which there was positive migration into the city between 1950 and 1960) there were more female than male migrants. The sex ratio for in-migrants to the capital, Mexico City, was 81.9; that is, only 82 males moved there for every 100 females who did.

Since cityward migration of women is so strong, and yet is so contrary to expectation—either our intuitive one or the experience of other devloping regions—we naturally ask the question "why?" The answer is not an easy one to come by. Surprisingly, most studies of individuals who become involved in the migration process in Latin America either combine both sexes together or focus on male migration. One of the most extensive studies of large-city migration, one which gives us some of the most cited knowledge of the Latin American migration process, is summarized in a book entitled *Men in a Developing Society*—a title perhaps selected because the data base was entirely male.

WHY WOMEN MIGRATE

To seek an answer to our question we can turn to several social science approaches. The economists' tradition is one of theoretical reasoning. Economists Bruce Herrick and Ester Boserup each have written books which give some attention to the question of greater female migration to Latin American cities, and they say that this migration is consistent with the rate-of-return hypothesis. They point out the lack of employment opportunities for women in farming villages in the Latin American countryside. Women for the most part do not work in fields, a situation in contrast to Asia and Africa where farmers are both women and men—more so in Africa than in Asia (and in African tradition women are most often the produce merchants as well). In Latin America women usually need to move to urban locations to have any earning abilities. Therefore, we can say urban areas have a differential "pull" to women from the countryside since in contrast to rural areas they have greater employment opportunities. The migration of women, therefore, is a rational move in search of a better life. In the words of Herrick, (1971; 74-75),

> . . . cities, by contrast, are characterized by a multitude of low-skill, low-productivity jobs in domestic service and petty commerce . . . Relative to pre-migration employment or self-employment alternatives, these jobs may be highly productive. Although their absolute returns may be thought low by outsiders, only differential returns affect movement based on rate of return. By contrast to opportunities for females, the possibilities for high *differentials* in earnings for men are lower, although absolute earnings in the city are considerably higher, and accordingly fewer males engage in urban migration in Latin America.

Boserup (1970; 188) contributes knowledge of the labor expectations for children in farming societies. She points out that in Africa "women need their daughters from around ten years old until marriage to take care of household duties and the younger children while they themselves work in the fields." In Latin America where rural women are less engaged in field work there may be less need for the labor of daughters and therefore it may be "economically advantageous for a poor rural family in Latin America to send the young girls in town as domestic servants, even if they get little beyond board and lodging.

THE SIGNIFICANCE OF DOMESTIC SERVANTS

Are all female migrants to Latin American cities servants? Cetainly not—but they are more likely to be servants, and servants are more likely to be female, than in other developing regions. ("Houseboys" are unknown in Latin America, but quite common in Asia and Africa.) To examine the importance of domestic service we turn to the anthropologists' tradition in which a small set of people is studied in great depth by a trained observer. Intrigued that most rural women in Latin America who move to cities and who enter the paid labor force become domestic servants, anthropologist Margo Smith conducted a study in Peru. She found that participation in the labor force through domestic service is one of the few opportunities for upward socioeconomic mobility available to a lower class woman. It enables her to become a member of a special segment of the lower class, one which has experienced intimate and relatively long-term contact with the middle- and upper- class ways of her employers as well as the lower-class ways of her own family. Thus she is likely to become more rapidly acculturated to the new urban setting than will other migrants who are not employed or who are employed among other members of the migrant lower class. As Smith (1973; 196) described the servant, "Her mother was likely to have been an illiterate, peasant wife. Her children will be likely to be metropolitan high school graduates; they will not be servants."

This possibility for social mobility is greater than in the countryside of subsistence agriculture—but how likely is the possibility? People make migration decisions in quest of a better life, but no one can predict the outcome of the quest. In modern North America, for example, neither a college student nor an apprentice plumber at the time of his or her migration decision knows what the outcome of that decision will be. Neither does the villager in Latin America who is contemplating a move to the city. At this point your attention is directed to a source which may seem unlikely—the official records of the United States Congress. Anthropologist Elsa Chaney, not intending for her testimony to be used in this class, reports a different side of the domestic servant picture than the one presented above. The above is, we hope, an understanding of *why people move* and why moves to cities are quite rational for women in Latin American. Dr. Chaney's testimony is a reminder that reality can be bleak even though the decision to migrate can be sound. It gives us insight into the complexity of the migration decision in a different culture and place.

Excerpts from: Testimony of Dr. Elsa Chaney, Deputy Coordinator, Office of Women in Development/Bureau for Program and Policy Coordination, Agency for International Development, before the Harrington Subcommittee on International Development, and the Fraser Subcommittee on International Organizations of the House International Relations Committee, March 8,1978, Washington, D.C.

My name is Elsa Chaney, and I am Deputy Coordinator of the Office of Women in Development at A.I.D. I am testifying today on behalf of the Women in Development Office and for the Coordinator, Arvonne Fraser. Unfortunately, she cannot be here today because she is at an International Women in Development meeting. Tomorrow and Friday, the Development Assistance Committee of the Organization for Economic Cooperation and Development in Paris is holding an informal meeting on the role of women in development. Representatives from women in development offices in Canada, Japan, France, Germany, Switzerland, Sweden and Australia will present papers, and other countries as well as United Nations organizations are represented. Mrs. Fraser asked me to convey her regrets and to request that a report on that meeting which she will submit on her return be made a part of the record of these hearings. We both are grateful for the privilege of testifying today.

The Honorable Chairmen, Members of the Committee, Ladies and Gentlemen:

During the past several years, there has been a growing concurrence in the development community, among academics associated with development, and in the U.S. Congress, that U.S. bilateral assistance should be directed towards fostering equitable growth and the alleviation of poverty in the Third World. Under the "New Directions" mandate, the Agency for International Development has been attempting to turn its programs, projects and activities towards assisting the world's poor majority.

. . . perhaps the most obvious fact to underscore is that women are not just a small "target group," but one-half the people in the developing world, and more than one-half of the poor majority. Yet, as A.I.D. Administrator John J. Gilligan recently observed, the role of women in development has been largely neglected. This is so even though women everywhere are intimately involved in the production and distribution networks which supply their own and their families' basic human needs. As Governor Gilligan also points out in the same address, "it may well be women, not men, who will be the decisive force in seeing to it that the world's poor have enough to eat, drink clean water, eat nourishing food, live to adulthood and become literate." . . .

Rather than simply recite that women already contribute to their society's basic needs and how they can be assisted to contribute more, I should like to talk about my friend, Hermalinda. I wish that this courageous woman who never complained or asked me for anything could be here to testify in my place. Her problems and her potential contribution to development touch upon the situation of all women of the poor majority.

Hermalinda is a domestic servant in Peru, part of the great wave of rural migrants not only flooding into the metropoli of their own countries in the past 25 years—but crossing international boundaries. Peruvians and Bolivians go in large numbers not only to Lima and La Paz, but to Los Angeles and San Francisco. One million Colombian peasants have crossed the long, permeable border between their country and Venezuela, and an estimated 300,000 Colombians have settled in the greater New York City area, 50,000 in Chicago as well as smaller groups in unexpected places as Central Falls, Rhode Island, and El Paso, Texas. Hermalinda is one of millions of the world's rural poor on the move—looking for work, looking for education, looking for a better life.

I met Hermalinda in a church yard in early 1975 when I was in Peru doing a study of poor women— domestic servants, street sellers, market women and factory workers. Most of them were migrants. A large percentage were the principal providers for their households—there was no adult male present. Often their children worked. Estimates are that one-third of households in the developing world are headed by women alone, as men migrate from the rural areas in search of jobs in mines, plantations, oil fields and cities or as women themselves leave the countryside. A study of migrants to Lima by John Macisco, a sociologist, shows that one-quarter of the women 35 years of age or older in his sample came to Lima without husbands but with one or more children.

Hermalinda came hoping the church's day care center would take Pablo Bernaldo, her youngest child. But there was no room. I went home with Hermalinda—climbing up the sandy hillside to a reed hut without a roof. The house was a half-hour's hike from the highway to Ciudad de Dios, "City of God," a *barriada* (marginal settlement) near Lima. There is irony in the name—Ciudad de Dios has not a single blade of grass, a tree or a flower. All is sand.

We talked that day and many times afterwards. Hermalinda had three children, all by the same father who also has another family and does not live with her. She gets up at 5 a.m.—her *patrona* gave her a transistor radio to hear the time—to set out on her one-hour bus journey to a beautiful suburb of Lima, Monterrico, where she earns the equivalent of a dollar a day. There is more irony here: "Monterrico" means literally "Rich Mountain."

Hermalinda has no clock, no refrigerator, only one bed, a rickety table, a couple of chairs and a two-burner kerosene stove. There is no electricity. The *junta de vecinos* (neighborhood association) is collecting quotas for the installation of electric lines (the Lima Light and Power Company only supplies the electricity), but Hermalinda neither has time to get to the meetings nor money for her assessment. She belongs to no organizations or associations.

Hermalinda dresses herself and gets Carlos, her 7-year-old, ready for school. She must leave Pablo, the 18-month-old sickly son, in the care of Sonia, the eldest of her children. She and Carlos wash from water out of a barrel, delivered weekly at a cost of 7 soles (about 25 cents). The family drinks the barrel water and washes the clothes from the same supply. There are no sanitary facilities of any kind. I leave it to your imagination what this means when I tell you that thousands of people live in Ciudad de Dios.

Sonia was nine years old when I first met her mother. She was repeating first grade for the third time, because she had to stay out of school to care for her youngest brother. Hermalinda would lock them in the reed hut because "there are evil men around the *barriada*." It always struck me that reed was not much protection for a young girl. Hermalinda does not get back home until eight or nine o'clock at night. She told me once that as she runs after her *patrona's* children, "I often see in my mind my own house burning up, and Sonia and the baby locked inside."

Sonia is bright, alert. I was with the family when the little brother Pablo sickened and died of malnutrition and dehydration. Even though it was sad, Hermalinda knew Pablo had been ill too long ever to be normal. Besides, his death meant that Sonia could go back to school. A death of a young child, in any case, is no novelty. When we buried Pablo in a sandy grave on a nearby hillside, he was just one of three or four who died in the immediate neighborhood within a month or two.

The father of Hermalinda's family is not a bad man. He comes to help when he can. But a casual construction laborer does not have much money to stretch between two families. During several months after he fell from a scaffold he had no money either for his regular *companera* (common law wife) and five children, or for Hermalinda.

After Pablo's death, Hermalinda determined to have no more children in order to give Sonia and Carlos more chance. In the past, she used contraceptives—the only maid in my fifty case studies of domestic servant-mothers to have done so. But a month's supply of pills costs the equivalent of $1.60. Still Hermalinda and others would limit their families if they could be sure they did not need children to earn cash or to provide for their parents in their old age—and if they had safe

and reliable contraceptives they could afford.

The last time I saw Hermalinda on a return visit to Peru eighteen months ago, Sonia was still in school. But Hermalinda has been obliged to find Sonia a job—also as a domestic servant. There is some hope—Sonia works mornings and uses part of her small earnings (the equivalent of $10 a month) for her school expenses. Thus Hermalinda has solved Sonia's educational problem, but the solution is an individual one, not a change in the structures of a society and economy which force ten year old girls to go to work.

Would Hermalinda have been better off had she remained in Ayacucho, her province, two days and two nights' journey by bus and one day by horseback? There, until she was nine years old, she and her mother had a large share in growing and processing the food. They spent many arduous hours in grinding, storing and curing. According to the season, Hermalinda's day included a stint of hoeing, planting, weeding, cultivating, and harvesting. She and her mother walked several miles every day to carry water. But Hermalinda had no choice. Her parents could not afford to buy her notebooks and school supplies so at the age of nine she went off to Lima with an aunt in order to work as a domestic servant "and to see if I could continue studying and working." She took the only road open to her—the one to the city. But she never got beyond the third grade.

In Hermalinda's story we have touched upon the key themes in the lives of most poor women in the Third World as they struggle to supply their family's basic human needs. Whether they live in the rural areas or the urban slums, their incomes and work opportunities lag behind those of men—although in absolute terms, males do not have many options either. If there has to be a choice, boys are given the chance at education; the gap between literate women and men in the developing world has widened in the past decade. Women do not have access to adequate nutrition and health care for either themselves or their families. Neither they nor their partners have safe and cheap contraceptives. They have no time to organize themselves because all their energy goes into solving the more immediate problem: will my children eat today? Often they face their struggle alone without a male companion. And in the face of inadequate changes in the social and economic structures, the cycle is repeated. Hermalinda, now 29, became a domestic servant at 9 years old; Sonia, her daughter, has followed in her footsteps at 10.

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MODULE 6:
FARM TO FACTORY: FEMALE INDUSTRIAL MIGRATION IN EARLY 19th-CENTURY NEW ENGLAND

by Roger P. Miller and Arlene C. Rengert

What determines the spatial distrbution of a population? What factors lie behind the rapid and continuing urban growth that began with the early industrial period? There are many structural interpretations which have been suggested by geographers and other social scientists, among them relative unemployment and relative wage rates. There is also a strong behavioral component to population distribution and redistribution. That is, except for some instances of forced migration, it is individual men and women who make decisions to change (or not to change) their residences who collectively redistribute a population. The range of choices that each group faces is influenced by structural features of places, and by behavioral constraints such as sex role specification and individual resources.

This reading should introduce you to the behavioral component of migration and should give you background in understanding the complexity of the migration decision in a different cultural and economic context. After reading it you should be prepared to discuss, specifically, reasons behind the migration of rural women to early industrial cities of the United States. You should have some understanding of how the range of choices may have differed for men and for women. And you should be able to suggest differences in the structure of society which result in contrasts between the migration process you are reading about and that of contemporary Northern American society.

OBJECTIVES

1. To understand the behavioral component of an aggregate spatial process, in particular, to gain behavioral insights into the rural-to-urban migration and population redistribution that took place during the development of America's early industrial economy.
2. To interpret migration as a considered response to perceived differences in opportunities between one place and another.
3. To recognize ways in which the structural characteristics of society influence migration decisions.
4. To analyze historical and contemporary differences between male and female migration paterns in America from the perspective of several social science disciplines.
5. To realize how examination of aggregate data, such as sex ratios, can suggest possible underlying behavioral processes (which can be identified and explored through separate investigation).
7. To suggest difficulties faced and resolutions attempted by early American women with regard to their migration decisions.

AN INTRODUCTION TO MIGRATION

Migration. This term means something to everyone, but because that meaning varies we should discuss the term before proceeding. It is something most of you did when you came to college—you changed your residence for a fairly lengthy period of time. If you crossed a county line in doing this you are counted in the U.S. Census as a migrant—or will be in the next census year if you are still here.

Migration, then, is the spatial process you engaged in when you decided to change your place of residence. For most people there is considerable decision making associated with migration, and some geographers characterize this decision making as responding to the "pushes" and "pulls" of different places. In your case, the "pull" which led you to your destination may have been the opportunity for further education at your college. Or perhaps there was a "push" associated with your hometown—such as high unemployment, or your perception that social opportunities were lacking. Regardless of your migration motivations and whether they are based on accurate perceptions, your migration has resulted in a changed *population distribution* since your hometown has lost one person in your age, sex, ethnic, and economic bracket and the place where you are now living has gained one person in those categories. All of these changes follow from your decision to migrate.

Most people make decisions to migrate based on a reasoned quest for a better life—such as you did when you moved here for college. The reasoning which leads to the decision may not in fact bring fulfillment of expectations and may be based on incomplete or incorrect information. For example, at least one of you may have had a better chance for a steady job and a higher income if you had apprenticed yourself to a local plumber. In middle-class America people make migration decisions not only for education and higher wages, but for larger houses as the families grow, for continual promotions, for open spaces or the excitement of the urban landscape, and even for smaller living units and warmer climates with retirement. These and other alternatives fit someone's reasoned "better life"—and, in fact, the average American moves thirteen times in a lifetime. Many of these moves are migrations, and the collective migrations that result from individual decisions produce the continual *redistribution* of the American population.

The same process has occurred throughout American history, of course. Our common image of America's development is that of a continuous westward movement of population during the nineteenth century. For the twentieth century, we generally think of the most prevalent population redistribution trend as *rural-to-urban migration.* Actually, these views are somewhat simplified, since there was a good deal of rural-to-urban migration in the nineteenth century, and in the twentieth century we still see large interregional movements of population, such as the current population redistribution towards the Sunbelt and the West.

You may have a general impression that during the nineteenth century there were limitless opportunities for earning a livelihood in rural areas of America, due to the constant supply of new land. You may also feel that most of the urban development that occurred in the early industrial period was fueled by cheap labor from abroad. In reality, neither of these commonly held views is completely correct. While there was a considerable amount of new land to be had during most of the nineteenth century, many people didn't become pioneers on new frontiers, and in fact there was considerable agricultural hardship in older settled areas, particularly New England. Also, although there was a considerable influx of immigrants from England, Ireland, and Germany in the years before 1860, the majority of the work force that

contributed to the industrial revolution in America, and the attendant rise of the cities, was comprised of *native* rural-to-urban migrants.

Historians, geographers, and social scientists have been studying this early rural-to-urban migration for quite a while. One of the kinds of data they have collected in an attempt to understand the migration process is the *sex composition* of the migrant streams in early industrial America.

SEX AND MIGRATION

Sex composition is traditionally expressed as a *sex ratio* of males per hundred females. From our own experiences we might expect sex ratios of about 100—that is, equal migration of males and females—or that if one sex predominates in a migrant group it could be the male. During most of American history, this has been true of rural-to-urban migrants. However, during the early industrial period females predominated in urban migration.

Researchers only recently have begun to examine the question of why early industrial migration was predominantly female. Although statistics for this early period are difficult to find, and often somewhat suspect, isolated indications of sex ratios for early industrial communities, such as Lowell and Waltham, Massachusetts, show a preponderance of female population in the industrial work force. In textile work specifically, the main attraction for migrants to these communities, the labor force was predominantly female. For example, females comprised 95% of the textile labor force in Waltham in 1819 and 90% of the textile workers in Lowell in 1827.

THE EARLY INDUSTRIAL PERIOD IN AMERICA

In the early nineteenth century, a series of changes occurred in the economy of New England which affected the entire future of American industrial development. Prior to 1800, New England economic life was largely based on agriculture, small-scale home-based manufacturing, and long distance trade which was centered in major seaports. In 1789, Samuel Slater, a mechanic who had worked in the textile factories of England, came to the United States carrying the plans for the Arkwright spinning machine in his head. By 1790 the first spinning mill based on the Arkwright machinery was operating in Pawtucket, Rhode Island. Not only were Pawtucket's spinning mills based on English mechanical inventions, but they also followed the English system of labor, where whole families were employed to tend the spinning and carding machinery, and children worked long hours as well as their parents. The factory actively sought families with large numbers of children, for they provided a constant supply of cheap labor. Quite often only the children were regularly employed, and the entire family lived on their small wages plus what the parents could earn by farming, and weaving the yarn into cloth.

For the development of these early textile factories, a number of things were necessary. Plans for the machinery often were brought illegally from England. The motive force for the machinery was water, and it was necessary to locate a mill where there was a sufficient hydraulic drop to power the machinery. Finally, the mill owners had to find an available labor force. Child labor was beautifully suited to needs of the mill owners, since work associated with the relatively simple Arkwright machines tended to be simple and repetitive.

The next major technical advance in the American textile industry didn't occur for over twenty years. During 1810-1812, Francis Cabot Lowell toured the British Isles, investigating the textile industry in England, Scotland, and Ireland. Great strides had been made in the English textile industry since Slater's departure twenty years earlier, in particular the invention of the power loom, which took the machine-spun yarn and wove it into cloth. On his return to America, Lowell had a power loom built according to his specifications, and he and twelve other Boston merchants initiated the integrated textile industry at Waltham, Massachusetts, on the Charles River. The new machinery, like that of Samuel Slater, required water power as a motive force. However, the labor requirements for this new machinery were quite different. The new power looms were much more complicated than Slater's spinning jennies, and child labor was no longer sufficient for the efficient operation of a mill. As a result, Lowell and the other Boston merchants began a search for another available labor force to replace the family system which had been used successfully in Slater's spinning mills in Rhode Island.

The Boston Associates were aware of the problems that had been engendered by industrialization in Britain. In particular, the laboring classes were seen by the capitalists as strife-ridden, ignorant, and impoverished. Rather than employing whole families, and running the risk of repeating the English situation, the Boston Associates decided to employ adult young women in their mills. They correctly perceived that this was a largely untapped labor force in the New England area. To avoid the problems associated with the laboring classes in Britain, the Boston Associates set up a boarding house system in Waltham, where the young women lived dormitory-style under the supervision of a house mother of impeccable moral reputation.

The water power of the slow-moving Charles River at Waltham was fully exploited in a rather short time, and further expansion of the factories was impossible. As a result, the Boston Associates looked for other factory sites on faster moving streams. They finally found a suitable location about twenty-five miles from Boston, at the confluence of the Concord and Merrimack Rivers. They secretly purchased the land from unsuspecting farmers in 1821, and they began to construct new mills at the site in 1823. They created a new company for the exploitation of this natural resource—the Merrimack Manufacturing Company, which was made predominatly of the original members of the Waltham group. In contrast to the Waltham situation, however, they did not merely plan individual mills, but rather an entire community. They renamed the community Lowell, in honor of Francis Cabot Lowell, whose development of the power loom had formed the basis of their commercial venture.

AGRICULTURAL DECLINE AND OUT-MIGRATION

At this time, the agricultural economy of New England was in severe decline. The heavily glaciated landscape had been only moderately productive at best, and during a century-and-a-half of farming, the agricultural potential had been severely depleted. In addition, the opening up of new farmlands in the west was increasing agricultural competition from lands which were both more fertile and easier to farm. As a result, much of the young male population of New England's farms was moving west, leaving behind the majority of the young female population in the declining agricultural communities.

It was this *segmental labor force* which the Boston Associates (and their later incarnation, the Merrimack Manufacturing Company) wished to exploit. To do this, they had to remove several obstacles to the participation of young women in the industrial labor force. First, because of the English experience, there was a general perception that the factory environment led to an erosion of morality, temperance, and character. Providing a segregated, strictly regulated living environment through the boardinghouse system to some extent alleviated the fears of skeptical New Englanders about the likely effects of life in a manufacturing town on their young daughters. In addition, however, the Merrimack Manufacturing Company went out of its way to provide a

stimulating intellectual environment in Lowell, encouraging the formation of literary societies, religious societies, and a generally high level of intellectural life for their female operatives. As a result of this, a stint in the factories of Lowell soon began to be perceived as an avenue for self-improvement and even escape from the stultifying life of New England's declining agricultural communities. Most of the women recruited for mill work in Lowell did not intend to make a permanent commitment to life in a factory. Rather, they went to the factories to earn money to help pay off mortgages on family farms during a period when agricultural production alone held out little promise for the reduction of such debt; to participate in an intellectually stimulating environment at a time when educational and literary activities for women were extremely limited; and to find husbands, in many cases, when marriage opportunities were extremely limited in agricultural communities which had experienced a great out-migration of young men.

In early nineteenth-century New England, opportunities for young women in farming communities had declined markedly. Most young women had little to look forward to except possible eviction from family farms because of nonpayment of mortgages and other debts, and an unsatisfactory spinsterhood due to the lack of marriageable males in the population. These were some of the push factors which encouraged women to migrate from their traditional communities. On the other hand, the factories at Lowell and Waltham offered a relatively high level of wages, an intellectually stimulating environment, and the possibility of marriage at a future date. These, then, were the pull factors attracting the young women to these manufacturing communities.

The migration of young women to Lowell and Waltham is particularly interesting for a number of reasons. There had already been some rural-to-urban migration of males in the late 1700's and early 1800's, along with the movement westward to new agricultural opportunities. The migration of women to factory towns, however, represented a major redefinition of acceptable roles for women in society. In contrast to the females who stayed on the farms, the women who went to Lowell and Waltham had the possiblity of becoming economically independent. They could also contribute significantly to the alleviation of financial problems at home. In addition, they found another outlet for their newly won independence—through literary works, artistic development, and ultimately even political participation in labor groups. The factory women at Lowell published an influential literary magazine known as the *Lowell Offering*. Young women actively participated in various religious and literary societies in the town. Later, when increasing economic competition led the factory owners to try to decrease wages and increase rates at the factory boarding houses, the women banded together in work stoppages and in some of the earliest labor collectives fighting for worker rights.

In contrast with today's industrial compositon, the labor force at the Lowell mills was predominantly female. Company recruiters who travelled throughout New England actively sought young women who would work in the mills for a period ranging from one to several years. Evidence indicates that the recruiters were given bonuses for women recruited more than 50 miles from Lowell, since there was less likelihood that these women would quickly return to their communities upon becoming homesick in their new environment.

Women provided the major workforce for the Lowell mills from the 1820's until the late 1840's. Gradually, however, their situation changed. Whereas the mill owners had initially offered high wages and reasonable working conditions to attract the young women to the mills, increasing economic competition, both domestic and foreign, led to successive moves to lower wages and speed up production. The female mill operatives gradually became more militant in their demands, and when their strikes met with little success, began to agitate for labor law reforms at the state and national level. Gradually, the mills became a less attractive place for employment. In the 1840's a new source of cheap labor appeared—Irish immigrants fleeing the potato famine in their homeland. Through the 1850's, Irish immigrant women, and later men, began to replace native young women as factory operatives in Lowell and in the other mill towns of New England.

Nevertheless, the Lowell experience had radically transformed the role of women in the United States economy. It had introduced the possibility of economic independence, of geographic mobility, and of the power of labor cooperation in such institutions as unions and political organizations. Many of the graduates of the Lowell factories went on to become leaders in the fight for women's suffrage and women's rights.